U2860-1
11/30/88

Business In Nebraska

November 1988
Vol. 44 No. 530

Prepared by the Bureau of Business Research
200 College of Business Administration
University of Nebraska-Lincoln
Lincoln, NE 68588-0406
402/472-2334

Tax Planning

Make It Part of Your Business Plan, Personal Financial Plan, and Estate Plan

Each of you should have a business plan, personal financial plan, and estate plan. The purpose of each plan will differ. Reasons may include expanding your business, sending your children to college, providing retirement income, or preserving your business for your family in the event of your death. But even though your plans seek to accomplish diverse purposes, they share a common goal—a goal of capital accumulation. Without capital accumulation, you will be unable to accomplish your purposes.

Because good tax planning will enhance your ability to accumulate capital, include tax planning when you develop your business plan, personal financial plan, or estate plan. Accumulate capital by reducing your tax liability through permanent reductions of taxable income; temporary reductions in taxable income; and use of credits to pay tax liability.

If you use tax planning to achieve capital accumulation, review your plans at least annually. Because the tax law continually is changing, your plans will be effective only if it is based on current tax law. You and your adviser must determine if current tax law still is helping you to reach your goals.

Examples of tax law changes in the past year are numerous. The Internal Revenue Service (IRS) has issued regulations on interest deductions and a revenue ruling on deferred payments to independent contractors. The United States Supreme Court has made a landmark ruling in which the principle of the historic *Corn Products*[1] case was limited. In 1986 and 1987, Congress made radical changes in the tax law. There has been yet another such change in 1988.

The paragraphs that follow briefly discuss several tax planning techniques that were affected in the past year—either by Congress, the IRS, or the courts. The purpose of this discussion is not to do your tax planning, for only a few of many tax changes can be reviewed here. Rather, the purpose is to remind you that things have been happening ... things that may affect your goal of capital accumulation. The author hopes this reminder will be all the prodding you need to have your adviser review your plans with you and determine how tax laws have affected them.

Business and Personal Financial Plans

Permanent Reduction in Taxable Income

You have made a permanent reduction in your taxable income when you receive part of your compensation in the form of **income excluded from the tax base**. For instance, you may have incorporated your business and, consequently, you may have been receiving a nontaxable benefit in the form of group term life or health insurance. Although your corporation was able to claim a tax deduction for the cost of these benefits, you, as the insured employee, did not include the benefit in your taxable compensation. By structuring a part of your compensation to be received as a nontaxable benefit, you permanently reduced your taxable income. But things have changed. You need to reevaluate the real cost of these benefits.

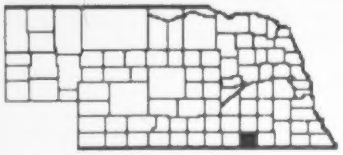
First, the real cost of providing group term life insurance coverage has increased because of the Revenue Act of 1987. Beginning in 1988, group term life insurance coverage in excess of $50,000 is subject to FICA tax. If the coverage is discriminatory, the value of the discriminatory insurance coverage is subject to FICA tax. Second, new tests must be applied, beginning in 1989, to determine if insurance and similar benefits are discriminatory.[2] If they are, a portion, if not all of the value of the benefit, will be included in the employee's taxable income. To avoid

In This Issue . . .

Tax planning 1
County of the month 2
Competitive edge 4
Review and outlook 7
Personal income 11
Economic scoreboard 12
Bureau personnel notes 12

County of the Month

Thayer



Size of county: 577 square miles, ranks 49th in the state

Population: 7,000 (estimated) in 1987, a change of -7.9 percent from 1980

Per capita personal income: $14,354 in 1986, ranks 22nd in the state

Unemployment rate: 3.7 percent in Thayer County, 4.9 percent in Nebraska for 1987

Net taxable retail sales ($000, unadjusted for inflation): $31,662 in 1987, a change of +12.3 percent from 1986; $19,938 during January-July, 1988, a change of +11.7 percent from the same period one year ago

Nonfarm employment (1987):

	State	Thayer County
Wage & salary workers	659,223	1,792
	(percent of total)	
Manufacturing	13.3%	13.2%
Construction and Mining	3.9	3.3
TCU	6.5	5.6
Retail Trade	18.7	15.2
Wholesale Trade	7.1	9.7
FIRE	7.3	5.6
Services	22.7	18.1
Government	20.5	29.3
Total	100.0%	100.0%

Agriculture:

Number of farms: 707 in 1982, 759 in 1978
Average farm size: 513 acres in 1982
Market value of farm products sold: $80.1 million in 1982 ($113,283 average per farm)

Sources:
Bureau of the Census: *Area Measurement Reports*, 1970; *Census of Agriculture*, 1982; *Census of Population*, 1980; *Provisional Estimates of the Population of Counties*, 1986
Bureau of Economic Analysis: *Survey of Current Business*, April 1988
Nebraska Department of Labor: *Labor Market Summary Report*, 1987
Nebraska Department of Revenue: *Net Taxable Sales* M.W.E.

Taxes (continued)

being discriminatory, you may need to extend insurance coverage to a greater number of employees. You must decide if the tax savings that remain are worth the additional cost. You face a business decision.

Income shifting is another technique often used to permanently reduce taxable income.

EXAMPLE: You've been making cash gifts to your child for a number of years. You are investing these funds for your child, hoping that he or she will use them for a college education.

By making gifts to your child, you have shifted the income that will be earned by investing these gifts to your child. This shift permanently has reduced your taxable income because you will not be taxed on the investment return. It is advantageous, however, only if your child is at a lower tax bracket then you are.

With the 1986 Tax Reform Act, children under the age of 14 must use the marginal tax rate of their higher-earning parent to compute the tax on their investment income. But this rule only applies if the child's investment income exceeds $1,000 annually. If the child's investment income is less than $1,000, the income shift should result in a tax savings. If your child's investment income will exceed $1,000, you should consider alternate investments. Rather than making investments that are interest-bearing, consider making investments that do not generate currently taxable income. Examples include growth stocks, municipal bonds, and E bonds.

When children become 14 years of age during a tax year, they no longer will have their investment income taxed at their parents' marginal tax rate. Their marginal rate generally will be 15 percent. If you are making investments for your child, you now may find that municipal bonds no longer provide a greater after-tax return than taxable interest-bearing investments. You should revise your investment strategy.

Regardless of the age of your children, money that they earn will be taxed at their own tax rate and not at your marginal tax rate. In addition, the first $3,000 of income they earn is not subject to income tax. But realistically, a child of 7 does not have the skills necessary to earn $3,000 annually. On the other hand, children at age 12 are able to take responsibility and often do in rural Nebraska. It is not unreasonable to expect them to begin earning money for their college education.

Example: A child, age 12, works in her parents' business for 450 hours during a year. The child earns $1,500.[3] *The parents are able to deduct these wages as a business expense. The parents reduce their taxable income to $35,000. Yet the child pays no income tax. Neither the child nor parent pays FICA or self-employment tax. The following tax reduction has been accomplished:*

	Tax Reduction	
	Without Wage to Child	With Wage to Child
Income Tax:		
($1,500 x 28 percent)	$420	N/A
($1,500 x 15 percent)	N/A	N/A
Self-Employment Tax:		
($1,500 x 13.02 percent)	195	N/A
FICA Tax:		
($1,500 x 7.51 percent)	N/A	N/A
TOTAL TAX	$ 615	$ -0-

While the child is paid $1,500, taxes are reduced $615. Forty percent of her wages are paid with tax savings.

A portion of the tax reduction in the preceding example resulted from a reduction in FICA or self-employment taxes. This occurred because the parents received a deduction when they paid their child—reducing their income subject to the self-employment tax. The child, however, as an employee of her parents was not subject to either FICA or self-employment tax. The Revenue Act of 1987, however, has limited this exclusion.

Prior to the Revenue Act of 1987, you did not pay payroll taxes if you employed your spouse or your child who was under the age of 21. Beginning in 1988, you were required to pay payroll taxes when you employed either a spouse or your child who was at least 18 years old. Consequently, the tax reduction achieved by income shifting to a spouse or older child has been reduced.

Rather than shifting income from yourself to a family member who is in a lower tax bracket, you may shift income to a corporation that you own and in which you are the primary employee. Perhaps this is necessary because you transferred business debt to the corporation at the time it was formed. Because the corporation now must generate cash flow to repay that debt, income must be retained in the corporation rather than being used to increase your salary as an employee. The advantage you gained by having the corporation pay the business debt is that the corporation, due to its lower tax rates, will have more after-tax income available.

A corporation generally is taxed at 15 percent on its first $50,000 of taxable income, whereas the stockholder-employee may be paying tax at a marginal rate of 28 or 33 percent. These tax savings may be used by the corporation to pay the debt. But today you need to rethink this plan. If your corporation is a personal service corporation, it is no longer a lower bracket taxpayer. Beginning with 1988, personal service corporations have a single tax rate—34 percent. Even for nonpersonal service corporations, the high tax cost of liquidation has made incorporation less advantageous.

Deferral of Taxable Income

Income may be deferred by **accelerating deductions**. But if deductions are being accelerated, the income reduction is temporary—lasting only as long as the deduction.

When an accrual method of accounting is elected, deductions are taken when performance occurs rather than when payment is made. In certain instances, however, accrual deductions are denied until payment is made. For instance, if you owe an amount to a cash basis taxpayer who is related to you, you are unable to claim a deduction until payment is made.[4] A similar rule has been enacted for independent contractors.[5] This rule, however, applies regardless of whether or not the independent contractor is related to you.

EXAMPLE: An independent contractor conducts public opinion polls for an accrual basis taxpayer. An agreement executed prior to the performance of the contract required payment of 25 percent of a fixed fee in 1988 and 25 percent in each of the next three years. Total performance, however, was completed in 1988. The accrual basis taxpayer may deduct only the fee that actually was paid in 1988 or within 2 1/2 months after his tax year end.

Another method of accelerating deductions is to recognize losses. The character of the recognized loss, however, determines the tax benefit of the deduction. If an ordinary loss is recognized, offset taxable income and, to the extent the loss exceeds taxable income, carry it back three years and forward 15 years. You receive the maximum income deferral and tax benefit. But if a capital loss is recognized, you only may use it to re[illegible] capital gains and, to the extent the loss exceeds capital gains, $3,000 of ordinary income. Although a capital loss carries forward indefinitely for an individual taxpayer, such a carryforward does not provide the immediate temporary income deferral you gain from an ordinary loss.

A recent United States Supreme Court case, *Arkansas Best and Subsidiaries v. Commissioner*,[6] has changed loss characterization planning. Prior to *Arkansas Best*, you may have relied on *Corn Products Refining Co. v. Commissioner*[7] to obtain ordinary loss treatment when you purchased stock or securities in a company for business reasons rather than investment reasons.

EXAMPLE: A group of ranchers purchase a cattle feeding corporation located in their area. The corporation has been a primary purchaser of their cattle, but it has been having financial difficulties. The ranchers are unable to save the cattle feeding business. Can they claim an ordinary loss?

Prior to *Arkansas Best*, these ranchers may have relied on *Corn Products* and claimed an ordinary loss because their purchases were motivated solely by business reasons. After *Arkansas Best*, the ranchers will have a capital loss if they purchased either stock or securities from the prior owners. Their motivation in acquiring the corporation is not relevant.

An ordinary loss still may be obtained in the above situation, but planning is required. And you should do that planning before you make your investment, particularly if high risk is involved.

In your business plan, you may have been using **accounting methods** to defer income. For instance, if you sell assets on an installment basis, you often can defer gain recognition. But that gain deferral has a cost. In an installment sale, you give up your right to immediate cash payment from the purchaser. Congress, however, perceived that taxpayers were using installment sales without incurring any loss in their liquidity. The taxpayer merely used the installment sales contract as collateral for a loan.

In 1986, Congress enacted legislation to treat a portion of a taxpayer's borrowings as a payment on certain installment sale obligations. In 1987, Congress modified this rule substantially. One change it made was to treat only debt that is directly secured by an installment sale obligation as a payment on that obligation. Several other changes were made. Consequently, if you had considered and rejected using an installment sale when selling your business or rental properties, you may want to reconsider your decision.

Although the Revenue Act of 1987 provided a beneficial change in the treatment of installment sales for nondealers, it provided harsher treatment for dealers. In 1986, Congress had eliminated installment sale treatment for revolving credit plans. The Revenue Act of 1987 eliminates all use of installment sales by dealers in either real or personal property.

Uniform capitalization rules are another accounting method change made by the Tax Reform Act of 1986. Under these rules, farmers were required to capitalize the cost of raising a heifer until she dropped her first calf. The 1988 Technical Corrections Bill enacted by Congress on October 21 has eliminated this capitalization rule for farmers. Farmers once again may accelerate expenses in order to defer taxable income.

Estate Plan

If your business has experienced substantial growth, your estate plan may include an estate freeze to minimize estate and gift taxes. To accomplish this freeze, you may have incorporated your family business, and a senior family member may have exchanged his or her common stock for preferred stock. The common stock, which had little or no value, was gifted or sold to younger family members. At the senior family member's death, only the preferred stock, which did not participate in the equity appreciation, would be included in the taxable estate. The goal of minimizing estate and gift taxes would be accomplished. The Revenue Act of 1987 may have destroyed your plan.

Prior to the Revenue Act of 1987, property was included in your gross estate if you retained a life estate or an income interest in property. In 1987, Congress extended this rule to include in your gross estate property transferred under the typical estate freeze. For this rule to apply, you must hold a substantial interest in the business; transfer, after December 17, 1987, property having a disproportionately large share in the appreciation in the business; and retain a disproportionately large share in the income of, or rights in, the business.[8] If your estate plan is using an estate freeze, you need to discuss this change with your adviser.

Conclusion

Tax laws are evolving and changing continually. Yet, they should be an important element in reaching the goals of your business plan, personal financial plan, or estate plan. Make them an important, viable component by reviewing your plans annually. Include new tax incentives in your plans that will help achieve your goal. And, to the extent possible, mitigate the effect of adverse tax laws.

Footnotes

**All statutory references are to the Internal Revenue Code of 1986, as amended to the date of publication, unless otherwise indicated.

1. 76 S.Ct. 20 (1955).
2. I.R.C. Section 89.
3. Earnings are based on wage of $3.30 per hour for 450 hours.
4. I.R.C. Section 267.
5. Rev. Rul. 88-68, I.R.B. 1988-35,20.
6. 108 S.Ct. 971 (1988).
7. 76 S.Ct. 20 (1955).
8. I.R.C. Section 2036(c)

This article was written by Nancy J. Stara, of the UN-L College of Business School of Accountancy. She is also a member of the Nebraska Bar Association, the American Institute of Certified Public Accountants, the Nebraska Society of Certified Public Accountants, and other professional groups.

Restoring the U.S. Competitive Edge--Part I

Management has been a popular topic during the past five years. Recent New York Times bestseller lists include such management volumes as *In Search of Excellence, A Passion for Excellence, Thriving on Chaos, One Minute Manager, Theory Z, The Art of Japanese Management, Iaccoca*, etc. Even some way-out books have become popular, including *A Book of Five Rings*, written by a famous 17th century Japanese samurai (Miyamoto Musasbi). Heralded as Japan's answer to the Harvard MBA, this book has nothing to do with management; however, American executives thought this book about samurai strategies could help them fight Japanese corporations.

The reason for the popularity of management books is that we have serious economic problems at the national level and various productivity problems at the individual organization level. Until the mid 1960s, the United States was number one in almost every category—productivity, product quality, research and development, international trade, per capita income, etc. I believe we achieved economic leadership for three primary reasons. First, we were able to make important innovations in product/service development and in production/delivery processes. Second, we used innovative marketing strategies to sell those products/services. Third, we had the entrepreneurship to bridge those innovations with human talents in organizations. Organizational innovations for products/services and delivery systems can be labeled contestable advantages. Such innovations can be copied or imitated easily by competitors in most cases. Entrepreneurship represents the true comparative advantage of U.S. corporations.

In the 1960s, U.S. corporations began to pursue short-term financial goals rather than long-term growth, with predictable consequences. Perhaps the most distressing measurement of our nation's economic woes is our annual productivity rate increase, one of the lowest among industrialized nations. Our manufacturing productivity rate increase during the past twenty years has been approximately 2.7 percent per year, ninth among the nine leading industrialized nations of the world. Japan leads other nations with a 9.3 percent average annual rate. The productivity rate of the U.S. service sector lags behind that of the manufacturing sector.

Our international trade deficit has been accumulating year after year. Even with the cheaper dollar and a protective government posture, our trade deficit reached $165 billion in 1987. As the late U.S. Senator Everett Dirksen once said, "One billion here and one billion there; it will soon add to real money." The estimated trade deficit for 1988 is $150-155 billion.

Today the U.S. is the largest debtor nation in the world. Our national debt is over $2 trillion. Much of that money is what we owe ourselves. We also owe more than $270 billion to foreigners, however. In 1987 we paid more than $26 billion in interest to foreigners. That amount is 50 percent more than what the federal government spent for higher education in 1987. Today about 30 percent of new U.S. treasury notes are being sold to foreigners. We would be hard pressed to keep our federal government in operation without borrowing heavily overseas.

We hear much about the importance of the service sector in the U.S. economy. When we examine the employment figures, the service sector dominates. In 1950, the manufacturing sector represented 35 percent of total U.S. employment, while agriculture and public organizations had 6 percent and the service sector 59 percent. In 1987, the respective employment figures for the above three categories were 19 percent, 5 percent, and 76 percent. In addition, 90 percent of all new jobs being created in the U.S. are in the service sector.

A sound and prosperous service sector cannot exist without a healthy manufacturing sector. There is no guarantee that we would be more successful in the service sector than in the manufacturing sector. The service sector currently is plagued by the same factors that brought many problems to manufacturing, such as emphasis on short-term financial goals over long-term growth. U.S. leadership in several important service industries has eroded significantly. For example, among the ten largest banks in the world (total assets), Citicorp is the only U.S. bank, eighth in size. The remaining nine largest banks are Japanese. The Japanese own 10 percent of U.S. bank assets. Among the ten largest insurance firms, only six are U.S. companies. The world's largest advertising agency is Japanese. Even high fashion centers around Tokyo today.

Another alarming fact is the increasing Japanese acquisition of U.S. corporations. Since 1987, major Japanese acquisitions of U.S. firms include:

*Bridgestone acquired Firestone for $2.6 billion
*Sony acquired CBS Records for $2 billion
*Aoki Corp. acquired Westin Resorts for $1.53 billion
*Nippon Life acquired Shearson Lehman for $538 million
*Several Japanese banks acquired Bank America Corp. stocks for $350 million
*Yasuda Mutual acquired Paine Webber for $300 million

These are some of the distressing facts about the U.S. economic situation. We must pause and closely examine what has happened to the U.S. since the 1960s. Today "Made in the USA" often means that the quality must be bad, but the service surely is worse. Let us review some of the causes behind these problems.

The Success Syndrome

When things were great, we took success for granted. Consequently, we became complacent and neglected the details that made U.S. corporations successful, such as product quality, service, and constant innovation to meet the customer's needs.

Antiquated Human Resource Management

In the 1910s, about 90 percent of all employed persons could be labeled laborers whose primary work responsibility called for physical labor. Today this number is less than 20 percent. Commensurately, labor costs amount to less than 15-20 percent of total cost for most products. The primary concern of most firms remains cutting labor costs by trimming manpower. We must concentrate instead on how best to utilize skilled human resources in such a way that the remaining 80-85 percent of total product cost can be reduced.

Many U.S. corporations still have the general notion that management's primary functions are command and control. Such a notion promotes the idea that only managers can think and make decisions and low-level employees simply perform the work given to them. This is not only a false idea about management, but such thinking is destructive. Management is a collaborative process where every member of the organization fully is exercising his or her creativity on the job for a common purpose.

Neutron Bomb Mentality

Many organizations measure their success based on their quarterly profit figures. Thus, even the slightest decline in the quarterly financial report requires prompt management action (such as zapping all human resources in sight) to preserve the plant, machinery, and inventories. That is what a neutron bomb does: it kills only persons without destroying anything else. Such a neutron bomb mentality on the part of management destroys the fabric of employees' loyalty and dedication to the organization.

Technology Syndrome

We have seen some remarkable advances on many technological fronts—computers, communication systems, new materials, fiber optics, etc. Such technological developments have profound impacts on the way organizations are managed. Technology, however is not like merchandise that we can just buy and then use. Technology is embedded in human brains. The interface of technology and human resources is the key for a successful application of technologies.

In 1978, the U.S. automobile industry was stunned to find that the Japanese cost advantage per automobile amounted to $1,500. To reduce this gap, the auto industry invested $40 billion in robotics for automated factories. After five years of American effort and investment, the Japanese advantage increased to $2,500.

Obviously, technology per se was not the problem. Many U.S. managers think technology is a panacea. The technology that Japanese firms use is typically inferior to the sophisticated technologies that comparable U.S. firms use. The big difference is that the Japanese choose the technology that is most appropriate for their products, personnel, environment, and strategies instead of always looking for the most advanced technology. Also, the Japanese are meticulous when it comes to the interface of technology and human resources. New technologies are not introduced to the workplace until a thorough training program is completed by all affected personnel.

Goliath Syndrome

The general notion among U.S. corporations is that organizations must become big to be powerful, dominant, and profitable.

Of course, there exists a critical mass in order to take advantage of the economies of scale and survive in certain industries. Big organizations, however, suffer from increased bureaucratic management, heavy corporate structure, and lost resilience. Small is beautiful when it comes to corporate size. Small firms are much more flexible in today's volatile environment.

Based on empirical studies, small firms obtain much better return from investment in research and development than larger firms. Their return is five times more than that of medium-size firms and 21 times more than that of large corporations. Many innovative U.S. corporations have begun to downsize or further decentralize their organizations. IBM, Exxon, GE, and Sears come to mind.

Lack of Knowledge about Competitors

Many U.S. firms and the American public in general still do not know or have an interest in our overseas competitors. We like to think that the U.S. is so powerful that we can crush any foreign competitor. We must realize that U.S. preeminence or domination in the global market is an illusion. Today the U.S. is a member in the network of industrialized and newly industrializing nations. We no longer can control other nations' trade or industrial policies through our economic muscle.

Our overseas competitors are not only tough, but they are determined to succeed in the global market. I go to Japan, Korea, Hong Kong, or Singapore at least once a year to examine their management innovations. Our competitors not only have the determination to excel, but they also have vitality through constructive corporate cultures. Their corporate mottos are not merely slogans, but the emotional backbone of the common destiny for their employees. "We build people," "Harmony and dedication," "Don't walk, run, run, run," "Today Japan, tomorrow the world," and "The customer is not our king, he is our god," reflect their corporate values.

Our technological innovations rewarded our corporations handsomely in the past because it took a long time for our competitors to diffuse our technological edge. Today, however, Sony, Matsushita, Samsung, and Toshiba can copy our ideas in weeks or days. Our competitive disadvantage comes not from our competitors' ability to copy our ideas, but from our inability to copy theirs.

A good lesson can be learned from a recent development in the field of superconductivity. An important breakthrough was made in this area by scientists at IBM's Zurich Laboratories. The finding was published by Dr. Alex Mueller in a German journal. Scientists in Germany, Japan, and other nations carefully studied this article. American scientists, however, did not know about this article until about six months after its publication. Consequently, we are about six months behind other nations in this particular area.

Our competitors also have shown astoundingly short development periods for new products. For example, Xerox Corporation recently discovered that their Japanese competitors can develop new copiers in 60 percent less time and at half the cost. Honeywell used to develop new thermostats in about two years using its own scientists and engineers, while the Japanese do it in one year. Now Honeywell's Tiger Team, composed of scientists/engineers and key manufacturing and marketing personnel can develop new thermostats in ten to twelve months. The parallel development process and the right to break any company rules have made competition possible for Honeywell.

In addition to the above factors, there are many others that are critical, including federal industrial policies and regulations, state government economic policies, management-labor relations, and the like. Excluding exogenous factors, the above items listed represent important indigenous factors that have plagued U.S. corporations.

Recommendations for restoring U.S. competitive edge will be presented in Part II in next month's issue of *Business in Nebraska*.

This article was written by Dr. Sang Lee. Dr. Lee is University Eminent Scholar, Professor of Management, and Chairman of the Department of Management in the College of Business Administration at the University of Nebraska-Lincoln. Dr. Lee is also the executive director of the Nebraska Productivity and Entrepreneurship Center.

Metropolitan Nebraskans....

The Omaha-Council Bluffs area now ranks as the 60th largest metropolitan statistical area (MSA), down from 57th in 1980. That population is estimated at 616,400 as of July 1, 1987. The Lincoln MSA now is ranked as the 152nd largest, with an estimated population of 207,700.

...An An Even More Metropolitan Nation

According to the Census Bureau, three of four Americans now live in metropolitan areas. That figure is up from 25 years ago, when 64 percent of Americans lived in metropolitan areas.

Are We Meeting Your Needs...

Putting out a newsletter is like fishing. We throw out the bait and hope that something strikes. It is time to check the line. We would like to hear from you. Do you find items of interest in *Business in Nebraska?* What do you like best? Do you have suggestions for future issues? Send us your ideas and suggestions.

Review and Outlook

National Economy

It is hard for a reader of the business press to believe that the current business expansion is continuing, yet that is what is happening. The newly named advanced report, formerly the preliminary report, on real Gross National Product (GNP) shows that the third quarter advance was 2.2 percent at annual rates. The third quarter increase followed a second quarter revised jump of 3.0 percent. The advanced third quarter number was lower than expected. Imports were stronger than anticipated, causing net exports to shrink.

Weakness was also attributable to drought effects. The drought is estimated to have decreased GNP by 0.6 percentage points in the third quarter and 0.9 percentage points in the second quarter. The Bureau of Economic Analysis (BEA) currently estimates the total drought effect for the year at $13.0 billion in real (1982) dollars or 0.8 percent of GNP. So far this year, they have allocated $6.0 billion to the second and third quarters. This leaves $7.0 billion or 1.75 percentage points at annual rates for the fourth quarter. Unless methods are changed, BEA should show a low rate of growth in the fourth quarter, barring any offsetting effects from some other sector.

Nevertheless, growth in the third quarter was positive. The game of outguessing the direction and magnitude of forthcoming revisions is reserved for a small group of experts. The only certainty is that there will be revisions. Data from the BEA suggest that revisions tend to be positive, but have a broad range. BEA states that the third quarter estimate of 2.2 percent will not be revised below 1.0 percent or above 5.0 percent.

The largest component of GNP is consumption. Real consumption rose 3.5 percent in the third quarter, after a 3.0 percent gain in the second quarter. The consumer durables portion of consumption barely advanced in the third quarter, but nondurables increased 3.7 percent. That pattern was nearly the reverse of the second quarter. Consumption of services, the more stable sector, increased 4.4 percent in the third quarter versus 2.8 percent in the second. Underlying these gains, personal income grew 0.5 percent in September following an increase of 0.3 percent in August.

Let's take a few minutes to review the pluses and minuses of the current (late October) evidence. On the plus side, consumer prices rose only 0.3 percent in September versus 0.4 percent for each of the preceding two months. Once again, the biggest elements have been food prices (up) and energy prices (down). The Consumer Price Index advanced 0.4 percent in September. Producer prices matched the 0.4 percent growth from August to September. Table III presents the price data in year ago comparisons. The picture is mixed, with intermediate producer prices matching the 0.4 percent gain, but raw material prices sliding half a percent. On a year ago basis, they are up only 1.0 percent.

The good news on prices is especially surprising in view of the current capacity utilization rate. Capacity utilization edged down marginally to 83.6 percent, within a range where inflation usually becomes a problem. Part of the explanation comes from signs of restraint in the labor compensation area. First year major labor contracts have increased only 1.2 percent through September this year versus a moderate 1.0 percent gain for the same period

Table I
Income and Earnings In Nebraska*
(millions of dollars)

	First Quarter 1987	Second Quarter 1987	Third Quarter 1987	Fourth Quarter 1987	First Quarter 1988	Second Quarter 1988	% Change 1988:II vs. Year Ago
Income							
Total Personal Income	22,622	22,206	21,944	24,610	23,452	24,381	9.8
Nonfarm	20,327	20,494	20,830	21,262	21,542	21,872	6.7
Farm	2,295	1,711	1,113	3,348	1,910	2,509	46.6
Earnings by Industry**							
Ag. Services, Forestry, & Fisheries	73	72	75	82	85	86	19.4
Mining	40	46	50	51	46	49	6.5
Construction	928	864	851	885	968	938	8.6
Manufacturing	2,121	2,134	2,206	2,255	2,345	2,399	12.4
Nondurable	1,041	1,067	1,093	1,121	1,144	1,160	8.7
Durable	1,080	1,068	1,113	1,133	1,201	1,240	16.1
Transportation & Public Utilities	1,571	1,574	1,612	1,629	1,661	1,713	8.8
Wholesale Trade	1,105	1,116	1,142	1,160	1,198	1,223	9.6
Retail Trade	1,528	1,543	1,556	1,574	1,614	1,627	5.4
FIRE	1,161	1,149	1,177	1,197	1,192	1,213	5.6
Services	3,154	3,207	3,279	3,387	3,358	3,465	8.0
Government	2,886	2,917	2,936	2,999	3,029	3,064	5.0
Federal, Civilian	453	451	462	467	470	466	3.3
Military	396	397	400	400	407	405	2.0
State & Local	2,037	2,069	2,075	2,132	2,152	2,194	6.0

*All data are seasonally adjusted at annual rates

**Earnings is the sum of wages and salaries, other labor income, and income earned by sole proprietors last year. Total compensation in private industry rose 1.0 percent in the third quarter versus 1.2 percent in the second. There is little pressure from the cost side at this time. If OPEC raises oil prices, the low rate of growth in consumer and producer prices may end. The latest news available shows no such indication.

Continuing on the plus side, housing starts rose in September 1.5 percent. That increase was due to multifamily starts, a sector that has been weak since tax reforms at the end of 1986. Single family starts decreased 2.3 percent. Housing starts peaked long ago, reaching a total of 1.84 million starts at annual rates in December 1986.

The unemployment rate fell 0.2 percent, and industrial production showed no increase. Have we been lucky or is something else happening? We'll return to this theme after reviewing some of the negatives.

On the minus side, in October the National Association of Purchasing Managers reported a decrease in their index of -1.4 percent. This index reports a percentage of members experiencing higher levels of activity than in the previous month. NAPM members tend to be associated with manufacturing firms. Consumer confidence as reported by the Conference Board plummeted 8.9 percent in September, the largest fall since the decrease following the stock market crisis last year. This series, however, has fallen twice so far this year and then rebounded. Consumer confidence levels are where they were in January and well above November 1987 levels. We should be concerned if the consumer confidence index continues to slide the next two or three months.

Reflecting the drop in consumer confidence, retail sales decreased in September 0.4 percent. Auto sales accounted for a large part of the drop, falling 1.9 percent. This has been blamed on the elimination of dealer incentives. Early October domestic auto sales (auto sales are reported every ten days) are somewhat below the year-to-date average, but well above year ago levels. Automakers may have pulled sales from September and October into the summer, or they may have conditioned consumers so that consumers won't buy without dealer incentives. Auto list prices have increased dramatically in the last five years, especially on some luxury models. Cash incentives are a tool used by manufacturers to increase traffic to dealerships and to offset sticker shock.

As a balance to the consumer-oriented minuses, there is good news on the income side. Third quarter disposable personal income rose 9.4 percent at annual rates before adjustment for inflation or 4.7 percent in real terms. Seasonally unadjusted average weekly earnings of factory workers leaped 2.7 percent over August levels. That figure is not an annualized rate, but a single month's gain. Later reports toned down this dramatic increase. Average weekly earnings or production and nonsupervisory workers (another series) rose 0.5 percent in September from August after adjusting for seasonal variation and inflation. There is even good news in the agricultural sector. Despite the drought, one forecaster expects net cash farm income to peak this year at $60 billion. That sharply contrasts to the $30 to $40 billion levels of the early 1980s.

What are all these conflicting data telling us? The story remains unchanged from previous issues. We appear to be expanding at moderate but positive growth rates. We should expect to see pluses and minuses in individual data series as the economy continues to adjust to the ongoing expansion. With the possible exception of the housing sector, there is no major economic data series displaying a long-term downward trend. Mixed signals are evident, but we continue to move forward.

The other major issue we face is harder to address—where are we going? If the BEA sticks to its guns on the allocation of drought effects, the first quarter of 1989 likely will show strong growth. According to the Undersecretary of Commerce, Robert

Table II
Employment in Nebraska

	Revised Aug. 1988	Preliminary Sept. 1988	Aug. % Change vs. Year Ago
Place of Work			
Nonfarm	666,199	673,133	1.0
Manufacturing	93,314	93,172	3.5
Durables	46,375	46,270	5.4
Nondurables	46,939	46,902	1.7
Mining	1,878	1,783	-2.3
Construction	25,831	25,199	-2.2
TCU*	44,304	44,281	1.6
Trade	171,498	171,645	0.0
Wholesale	48,189	47,990	1.3
Retail	123,309	123,655	-0.5
FIRE**	48,326	48,260	0.8
Services	150,358	150,589	0.1
Government	130,690	138,204	2.0
Place of Residence			
Civilian Labor Force	818,125	818,466	0.1
Unemployment Rate	3.2%	3.2%	

*Transportation, Communication, and Utilities
**Finance, Insurance, and Real Estate

Source: Nebraska Department of Labor

Table III
Price Indices

	Sept. 1988	% Change vs. Year Ago	YTD % Change vs. Year Ago
Consumer Price Index - U* (1982-84 = 100)			
All Items	119.8	4.2	4.0
Commodities	113.0	3.8	3.4
Services	127.3	4.6	4.5
Producer Price Index (1982 = 100)			
Finished Goods	108.6	2.7	2.2
Intermediate Materials	108.7	5.8	5.4
Crude Materials	96.6	1.0	2.9
Ag Prices Received (1977 = 100)			
Nebraska	151	12.7	10.7
Crops	138	62.4	33.6
Livestock	160	-3.0	2.8
United States	145	12.4	8.0
Crops	139	32.4	17.5
Livestock	151	-0.7	1.3

U* = All urban consumers
Source: U.S. Bureau of Labor Statistics

Ortner, the end of the drought will add 2.75 percentage points to GNP in that year. For the remainder of the year, the preponderance of testimony from those brave enough to make forecasts is that next year will show lower growth than this year. In general, economic forecasters call for growth in the 2 percent area for 1989.

What evidence do we have to support such a conclusion? Some cite impending inflation, but so far there is no evidence. The main risk is energy prices. OPEC has been having difficulties coordinating producing nations and raising prices. Others rely on the Federal Reserve System to tighten the monetary screws too hard. That possibility cannot be dismissed by anyone after the 1981-1982 downturn. Even here, a necessary condition appears to be an acceleration of inflation. It is the Fed's overreaction to inflation that causes concern. Still others expect a reversal of the devaluation of the dollar to lead us downward.

In reality, I suspect that the real cause of the forecasts of decreased growth next year by many economists is that they don't believe that such a long expansion can continue.

Perhaps our lack of understanding of how the expansion can continue is caused by a lack of understanding of what is maintaining our growth. I see two major factors. Our exports have helped in recent quarters. Net export numbers in the GNP accounts are not as negative as those to which we have been accustomed. Perhaps we have been able to export some of our inflation as well. That point is difficult to prove, but makes interesting speculation. Second, an economy as service-oriented as ours behaves differently than a manufacturing-oriented economy. In particular, business cycle effects are not as strong. I don't think that mainstream forecasting economists have given that factor enough thought yet. It will be interesting to watch this area of analysis develop.

Is another recession looming? One may be likely, but without the ability to pinpoint the timing of a recession, I think it would be a disservice to tell persons to run for cover when there is plenty of opportunity to harvest economic gains before the impending storm.

Table IV
City Business Indicators
July 1988 Percent Change from Year Ago

The State and Its Trading Centers	Employment (1)	Building Activity (2)
NEBRASKA	2.3	8.1
Alliance	2.4	75.6
Beatrice	2.1	219.9
Bellevue	2.6	61.9
Blair	2.6	-63.3
Broken Bow	3.6	88.8
Chadron	2.9	-85.2
Columbus	4.5	98.3
Fairbury	2.9	1,861.2
Falls City	1.9	36.2
Fremont	1.4	2.4
Grand Island	1.0	45.8
Hastings	0.8	95.9
Holdrege	2.8	-22.6
Kearney	1.3	92.4
Lexington	1.8	307.4
Lincoln	1.0	9.1
McCook	0.2	219.4
Nebraska City	2.2	-7.5
Norfolk	1.4	-17.8
North Platte	1.5	21.3
Omaha	2.6	-11.1
Scottsbluff/Gering	1.4	-11.0
Seward	1.2	-24.8
Sidney	2.3	-21.7
South Sioux City	6.4	89.9
York	1.7	-63.0

(1)As a proxy for city employment, total employment (labor force basis) for the county in which a city is located is used.

(2)Building activity is the value of building permits issued as a spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Cost Index is used to adjust construction activity for price changes.

Sources: Nebraska Department of Labor and reports from private and public agencies.

Figure I
City Business Index
July 1988 Percent Change from Year Ago

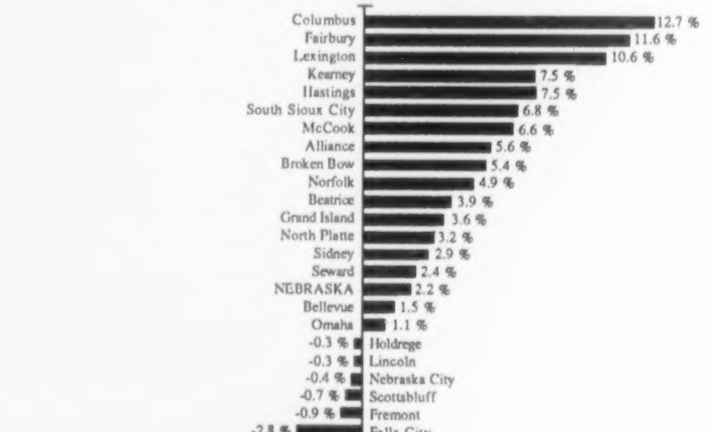
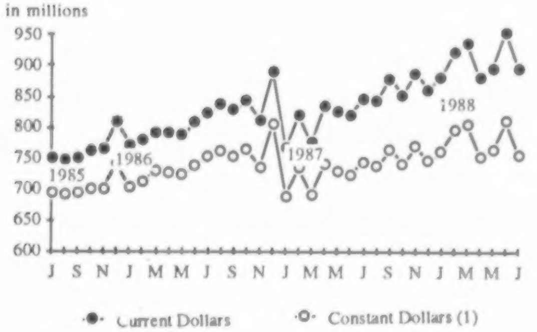


Table V
Net Taxable Retail Sales of Nebraska Regions and Cities

	City Sales (2)		Region Sales (2)		
Region Number and City (1)	July 1988 (000s)	% Change vs. Year Ago	July 1988 (000s)	% Change vs. Year Ago	YTD % Change vs. Year Ago
NEBRASKA	$782,584	5.6	907,337	5.8	11.8
1 Omaha	269,098	4.9	338,936	3.8	8.6
Bellevue	11,291	-1.0	*	*	*
Blair	4,151	3.4	*	*	*
2 Lincoln	106,678	0.9	125,734	3.5	13.0
3 South Sioux City	4,323	5.7	6,268	5.8	22.5
4 Nebraska City	3,559	1.4	16,704	1.5	8.8
6 Fremont	14,228	-0.1	26,418	1.4	14.2
West Point	2,022	0.9	*	*	*
7 Falls City	1,927	-8.3	8,074	0.2	7.2
8 Seward	3,779	11.0	13,471	6.5	12.3
York	5,796	-3.9	14,418	8.7	12.6
10 Columbus	14,789	20.8	24,901	12.5	16.1
11 Norfolk	17,282	15.8	30,930	13.1	18.0
Wayne	2,274	3.6	*	*	*
12 Grand Island	29,695	6.7	42,686	6.3	15.6
13 Hastings	14,378	12.7	23,723	9.3	11.2
14 Beatrice	6,687	-2.5	15,930	-0.3	10.1
Fairbury	2,379	-5.9	*	*	*
15 Kearney	17,612	12.4	25,407	12.3	19.4
16 Lexington	5,158	10.6	15,099	12.9	20.8
17 Holdrege	4,042	3.0	7,966	0.6	12.5
18 North Platte	15,127	7.3	18,958	6.6	16.7
19 Ogallala	6,067	5.9	11,579	8.5	13.5
20 McCook	7,053	5.7	10,276	7.8	18.6
21 Sidney	3,915	10.7	7,904	0.8	9.4
Kimball	1,979	-0.5	*	*	*
22 Scottsbluff/Gering	16,076	1.8	22,665	2.6	6.8
23 Alliance	5,084	7.8	13,529	5.5	12.3
Chadron	2,684	-8.2	*	*	*
24 O'Neill	3,698	4.5	12,552	11.2	16.7
Valentine	2,418	8.2	*	*	*
25 Hartington	1,345	13.3	7,561	4.2	9.8
26 Broken Bow	2,970	5.4	10,378	10.0	20.8

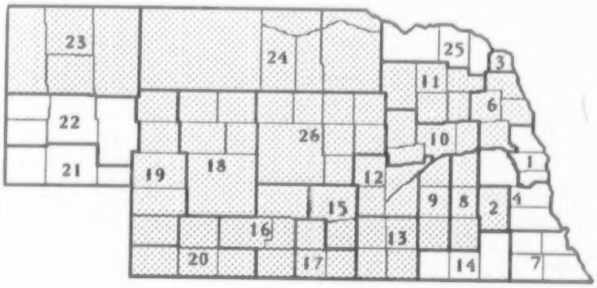
(1) See region map.
(2) Sales on which sales taxes are collected by retailers located in the state. Region totals include motor vehicle sales.
* Within an already designated region.
Compiled from data provided by the Nebraska Department of Revenue

Figure II
Nebraska Net Taxable Retail Sales
(Seasonally Adjusted)



(1) The Consumer Price Index (1982-84 = 100) is used to deflate current dollars into constant dollars

Figure III
Region Sales Pattern
YTD as Percent Change from Year Ago



Shaded areas are those with sales gains above the state average.

Nebraska Economy

The personal income data shown in Table I tell us what we already know. Yes, we're "doin' fine." Total personal income advanced 9.8 percent in the second quarter versus year ago levels. (The attentive reader may have noticed that the most recent Nebraska personal income is for the second quarter, whereas the national personal income was through the third quarter. The lag from first receipt of national personal income to corresponding receipt of Nebraska personal income is about two and one-half months.)

Most of the gain came from the farm sector. Total farm personal income increased 46.6 percent from a year ago and 31.4 percent from the previous quarter. The gain in nonfarm personal income was a more moderate 6.7 percent from a year ago or 1.5 percent from the first quarter. Nebraska's manufacturing sector increased 12.4 percent from a year ago or 2.3 percent from the previous quarter. Thus, the strength in retail sales of the first half of this year is not surprising. The income base was there to support it. The most recent data show that seasonally adjusted net retail sales have continued their sawtooth pattern, dropping to $895,675 million in July (see Figure II). Total region sales in Nebraska (see Table V) remained well above year ago levels in July and are nearly 12 percent above year ago levels on a year-to-date basis.

It is much more difficult to say how the year will finish. Preliminary employment data for September indicate that the nonfarm sector continues its expansion, with employment 1.0 percent ahead of a year ago. The unemployment rate remains 3.2 percent, the same as August. We have to make substantial assumptions to draw a picture for the balance of the year. The first assumption is the relatively easy one that nonfarm employment and earnings will have no major downfalls between now and Christmas. The second one is the hard one. What will happen to the agricultural sector? Although many Nebraska farmers will be affected adversely by the drought, many others will do well. According to mid-October reports, Nebraska corn production will be down 4.1 percent versus -35.6 percent for the nation. Nebraska wheat production will be down 16.1 percent versus -14.0 percent for the nation. But prices are ahead of last year. Wheat prices were up 46 percent, corn up 70 percent. In both cases, prices are well above the loan price. As a result, 1988 Nebraska farm income may rise above last year.

Turning to within state comparisons, we find it hard to discern any pattern. We can see how easy it is to get distortions in data. A large hospital project in Fairbury skyrockets its building activity number (and has for several months). Without another large project , next year's data for Fairbury will show large decreases in building activity. Drawing relationships between employment and sales almost works for Omaha and South Sioux City, but in nonmetropolitan Nebraska, the pattern breaks down. In general, regional sales tend to outstrip employment changes. Perhaps all this is saying is that the agricultural sector is especially important to nonmetro Nebraska.

J.S.A.

Terms to Know

Place of Work vs. Place of Residence

Nebraska employment data routinely are reported in two formats: place of work and place of residence. Table II in this publication is organized according to these classifications. Data on the place of work basis are counts of the number of wage and salary jobs in nonfarm industries. The data are collected from firms on a monthly basis and are alternatively referred to as work force data. In contrast, data on the place of residence basis are counts of the number of Nebraska residents who are participating in the labor force, are employed (including the self-employed), or are unemployed. These data are collected from a survey of Nebraska residents and are alternatively referred to as labor force data.

J.R.S.

Nebraska Per Capita Personal Income

One important measure of how well a state is doing is its per capita personal income. Using this measure provided by the Bureau of Economic Analysis, Nebraska is slightly behind either the nation or the plains region. In 1987, Nebraska per capita personal income was $14,328. That level compared to a U.S. average of $15,481 and a plains average of $14,792. Nebraska is 26th of the 50 states plus the District of Columbia. The District is number two, just behind Connecticut. Further, if Minnesota were removed from the plains data, Nebraska would be well above the regional average. When Minnesota is included, Nebraska ranks fourth in the region.

There's some concern, however, that Nebraska's growth rate has slipped relative to either the plains or the U.S. From 1982 to 1987, Nebraska per capita personal income grew by 5.3 percent. That was slightly behind the plains (5.9 percent) and behind the U.S. (6.2 percent). In the past, Nebraska has both exceeded and lagged the national and plains growth rates. With some efforts in the right direction, our growth rates can exceed those of the region and nation.

Furthermore, we have to ask the question of whether per capita personal income is the only measure of economic health on which to focus. Aren't cost of living and quality of life important considerations? For example, Nebraskans do not pay the national average $127,200 for new homes, much less the $170,900 average paid in the northeast. Nebraskans may desire the income levels of Connecticut, but are they willing to assume the density of living conditions and high housing prices that accompany it?

One last note. Please don't get carried away with the exact numbers you see reported here. The Bureau of Economic Analysis periodically revises them. We hope that the relative position of the numbers remains fairly constant with the various revisions.

J.S.A.

Scoreboard

Percent of same month one year ago

	State	Metro+	Nonmetro
Motor Vehicle Sales (July) Constant $	↑ 3.3%	↑ 1.7%	↑ 4.9%
Nonmotor Vehicle Sales (July) Constant $	↑ 1.4%	↓ -0.7%	↑ 3.7%
Building Activity (July) Constant $	↑ 5.5%	↓ -3.3%	↑ 20.3%
Employment (Sept)	↑ 1.0%	↑ 2.6%	↓ -0.6%
Unemployment Rate* (Sept)	↓ 3.2%	↓ 3.2%	↓ 3.2%

+Omaha and Lincoln
*Unemployment is this month's rate, not a percent change from year ago

Bureau Personnel Notes:

David DeFruiter

The Bureau of Business Research is proud to introduce David DeFruiter, statistical technician. David joined the Bureau staff in January 1987. He is a native Nebraskan, raised in Gothenburg. David graduated from Kearney State College with a degree in human factors and a minor in statistics. David completed a number of research projects and an independent study for the Boeing Military Airplane Company in Wichita, Kansas during his four years at Kearney State College.

David's contributions to the *Business in Nebraska* newsletter are the economic and demographic statistics that help readers make more informed business decisions. He is also a State Data Center contact person and the information management specialist at the Bureau of Business Research.

David is the resource person for the Bureau's statistical software package, the Site Evaluation and Location System (SELS). The SELS package accesses 1980 information from the Bureau of the Census by block level for any county in the United States.

David currently is working on developing an electronic bulletin board system. This new service will permit data users to access information electronically by computer modem.

Mark Your Calendars....

A state of the state conference is being planned for January 26, 1989 at the Nebraska Center for Continuing Education. The conference will focus on the outlook for Nebraska and on future choices. Further details and agenda will be forthcoming in the December issue.

Business
in
Nebraska

PREPARED BY BUREAU OF BUSINESS RESEARCH
Association for University Business & Economic Research

Business in Nebraska is issued as a public service and mailed free of charge upon request to 200 CBA, University of Nebraska-Lincoln, Lincoln, NE 68588-0406. Copyright 1988 by Bureau of Business Research, University of Nebraska-Lincoln.

November 1988, Volume 44 No. 530

University of Nebraska-Lincoln-- Martin Massengale, *Chancellor*
College of Business Administration--Gary Schwendiman, *Dean*

Bureau of Business Research
F. Charles Lamphear, *Interim Director*
James R. Schmidt, *Acting Associate Director*
Merlin W. Erickson, *Research Associate*
Margo Young, *Editorial Assistant*
John S. Austin, *Statistical Coordinator*
David D. DeFruiter, *Statistical Technician*

The University of Nebraska-Lincoln does not discriminate in its academic, admission, or employment programs and abides by all federal regulations pertaining to same.

Non-Profit Org.
U. S. Postage
PAID
Lincoln, Nebraska
Permit No. 46

CONGRESSIONAL INFO SERVIC270238
SRI BR
4520 EAST-WEST HWY
BETHESDA, MD 20814

U7869-1
12/30/88

Business
In
Nebraska

December 1988
Vol. 44 No. 531

Prepared by the Bureau of Business Research
200 College of Business Administration
University of Nebraska-Lincoln
Lincoln, NE 68588-0406
402/472-2334

The Importance of Irrigated Agriculture to Nebraska's Economy

Over 65 percent of Nebraska's total crop output in 1985 was produced on less than 40 percent of the state's total cultivated land. The market value of crop output from these 6.1 million acres was just over $1.9 billion. This disproportionate yield was accomplished through irrigation. Irrigation is broadly defined here as a package of resources of which water is one part.

Estimates show that under simulated dryland conditions for 1985, only about $946 million of crop output could have been grown on these acres. The difference of $980 million is the direct contribution or direct impact of irrigation.

The state enjoyed added economic advantages from irrigation, called indirect benefits or indirect impacts. These indirect impacts occurred as a result of the various inputs (such as fertilizer, diesel fuel, insurance, and the like) that were purchased by irrigators for crop production purposes. In net terms, these additional impacts for 1985 totaled about $1.3 billion. (The net concept will be defined later.) These indirect impacts represent sales and incomes of many Nebraska businesses for 1985 whose markets are linked directly and indirectly to irrigated agriculture. Indirect benefits typically exceed direct benefits. Such is the case for irrigated agriculture, which means that nonagricultural businesses tend to gain the most from irrigated agriculture.

Considerable interest in the last 25 years has focused on the economic importance of irrigated agriculture to the state's economy. The economic importance of irrigated agriculture was determined in a 1963 study by constructing an analytical model, called an input-output model, that identified the economic relationships between irrigated agriculture and other industries or sectors in Nebraska for the year 1963. This study concluded that in 1963 dollars, the $121 million net increase in crop output due to irrigation generated an additional $160 million in indirect benefits to the state's economy.[1] A similar study was conducted in 1974 of the period 1967 through 1970. This second study also concluded that the state receives substantial economic benefits from irrigation.

This article is based on a study of irrigated agriculture for 1985. 1985 was chosen as the study period because it represents the most recent year for which complete economic information is available to construct a state input-output model.

An input-output model is an excellent tool for identifying and measuring economic impacts--it can be constructed for regional economies; it can provide considerable industry detail; and it can produce industry impact multipliers. An input-output model shows the various inter-industry relationships or linkages between producers and suppliers for some accounting period. An example of an inter-industry relationship or linkage would be the purchase of fertilizer from a fertilizer dealer by an irrigator. Many thousands of similar transactions occur during an accounting period. These can be summarized in an input-output model as aggregations of transactions among industries or sectors. For instance, the preceding example would appear in an input-output framework as a transaction between the irrigated crops sector and the trade sector. The 1985 state input-output model contains 78 producing sectors and estimates of the inter-industry transactions among these producing sectors.

Inter-industry transactions create a multiplier effect—a change in the output of one industry will generate or induce changes in the outputs of many other industries in the economy. Therefore, total economic activity or output increases by some multiple of the initial change in output. This multiple effect or impact is captured in the popular economic multiplier concept. The popularity of input-output models is due largely to the ability to produce industry specific impact multipliers. For example, the industry multiplier for the irrigated crops sector in the 1985 Nebraska input-output model is $2.21. The $2.21 figure means that on average each dollar of irrigated crop output in 1985 generated a total of $2.21 of gross output in Nebraska for that year. One dollar of the $2.21 multiplier represents the dollar of

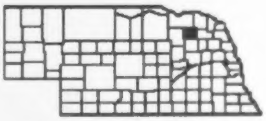
(continued on page 2)

In This Issue . . .

Irrigation 1
County of the month 2
Competitive edge 4
Review and outlook 5
Terms to know 8
State of the state conference 11
Economic scoreboard 12
Bureau personnel notes 12

County of the Month

Pierce



Size of county: 573 square miles, ranks 58th in the state
Population: 8,400 (estimated) in 1987, -0.7 percent from 1980
Per capita personal income: $13,072 in 1986, ranks 41st in the state
Unemployment rate: 4.3 percent in Pierce County, 4.9 percent in Nebraska for 1987
Net taxable retail sales ($000, unadjusted for inflation): $18,260 in 1987, a change of -7.4 percent from 1986; $19,938 during January-August, 1988, +12.8 percent from the same period one year ago
Nonfarm employment (1987):

	State	**Pierce County**
Wage & salary workers	659,223	1,602
	(percent of total)	
Manufacturing	13.3%	5.6%
Construction and Mining	3.9	4.3
TCU	6.5	10.6
Retail Trade	18.7	18.4
Wholesale Trade	7.1	10.5
FIRE	7.3	4.7
Services	22.7	19.2
Government	20.5	26.7
Total	100.0%	100.0%

Agriculture:

Number of farms: 865 in 1982, 932 in 1978
Average farm size: 370 acres in 1982
Market value of farm products sold: $72 million in 1982 ($83,281 average per farm)

Sources:
Bureau of the Census: *Area Measurement Reports*, 1970; *Census of Agriculture*, 1982; *Census of Population*, 1980; *Provisional Estimates of the Population of Counties*, 1986
Bureau of Economic Analysis: *Survey of Current Business*, April 1988
Nebraska Department of Labor: *Labor Market Summary Report*, 1987
Nebraska Department of Revenue: *Net Taxable Sales* M.W.E.

Irrigation (continued)

direct irrigated crop output. The remainder, $1.21, represents additional indirect benefits to Nebraska businesses. A similar industry multiplier was determined from the input-output model for the dryland crops sector. The dryland crops multiplier was calculated to be $2.07 for 1985. Both multipliers were used to calculate the current indirect impacts of irrigated agriculture.

This article describes how the direct and indirect benefits of irrigated agriculture were calculated for the 1985 study period. It is important to point out the distinction between current benefits and investment benefits. Current benefits or impacts refer to the short-run impacts due to additional production during a single production or processing period. Investment impacts refer to investment activity attributable to the capital expansion of an industry, such as growth in irrigated agriculture. Investment impacts were not measured in this latest study, because the study period was limited to 1985. Therefore, the discussion that follows involves only current impacts. For brevity, current impacts will be termed impacts.

Direct Impact

The direct impact of irrigated crops was defined as equal to the 1985 output of the irrigated crops sector minus what could have been produced on the irrigated land under dryland simulated conditions. Estimates of the dryland equivalents are given in Table 1 with the actual irrigated crop output by crop for 1985. The irrigated crops considered in the study include corn, grain sorghum, soybeans, wheat, and sugar beets.

Table 1
Irrigated and Dryland Equivalent Output:
By Crop for 1985
($1,000s)

Crop	Irrigated Crop Output	Dryland Equivalent Output
Corn	$1,701,224.00	$449,900.20
Grain Sorghum	48,445.25	318,866.70
Soybeans	124,416.00	126,232.40
Wheat	17,036.25	48,689.20
Grass, Fallow, & Idle	—	2,117.50
Sugar Beets	35,027.00	—
Total	$1,926,148.50	$945,806.00

The dryland equivalents require some explanation. These hypothetical outputs for 1985 were simulated for irrigated crop acres. Each of the irrigated crops hypothetically was removed from production and a dryland crop or use was substituted. Dryland equivalent crops and yields for 1985 were determined on the basis of soil conditions and climatic factors by Crop Reporting District (CRD). The opinions of several Cooperative Extension Service specialists from a number of the CRDs were used to finalize the estimates of simulated dryland yields for dryland equivalent crop outputs. The market values of the dryland crop equivalents shown in Table 1 are based on actual 1985 market conditions. It was assumed that because food and feed grain prices are determined in world markets, the magnitude of the change in cropping patterns and outputs that would occur as a result of the simulated dryland conditions would not have any measurable effect on market prices.

The dryland crop equivalents given in Table 1 reflect a major change in cropping patterns between irrigation and dryland. This change is even more evident in the acreage allocations by crop that are shown in Table 2.

Table 2
Irrigated and Dryland Equivalent Acreage:
By Crop for 1985

Crop	Irrigated Acres	Dryland Equivalent
Corn	5,050,000 (83%)	2,496,470 (41%)
Grain Sorghum	217,000 (4%)	1,879,090 (31%)
Soybeans	640,000 (11%)	746,440 (12%)
Wheat	105,000 (2%)	414,050 (7%)
Grass, Fallow, & Idle	— (0%)	529,150 (9%)
Sugar Beets	53,200 (<1%)	— (0%)
Total	6,065,200 (100%)	6,065,200 (100%)

Irrigated agriculture in Nebraska is predominantly irrigated corn. In 1985, 83 percent of irrigated land was allocated to corn production. Corn production dropped to 41 percent under simulated dryland conditions. Table 2 shows that approximately 2.5 million acres of irrigated corn would shift to grain sorghum and wheat production under dryland conditions. It was assumed that no sugar beet production would occur under dryland conditions, because the state's total output of sugar beets is concentrated in western Nebraska. It also was assumed that about 0.5 million acres of irrigated land would be diverted to grass, fallow, and idle land. This would occur mostly in northwest and north central Nebraska.

The total direct effect of irrigated agriculture, as shown in Table 3, was estimated at about $980 million. The negative figures recorded in Table 3 indicate the simulated allocation of irrigated corn acres to more drought resistant crops such as grain sorghum, soybeans, and wheat. The $980 million figure is a net estimate of the direct impact of irrigated agriculture for 1985.

Table 3
Direct Impacts By Crop for 1985
($1,000s)

Crop	Direct Impact
Corn	1,251,323.80
Grain Sorghum	-270,421.45
Soybeans	-1,816.40
Wheat	-31,652.95
Grass, Fallow, & Idle	-2,117.50
Sugar Beets	35,027.00
Total	980,342.50

Indirect Impact

The net increase in gross output (income) of over $980 million, shown in Table 3, is a measure of the direct impact of irrigated agriculture in Nebraska for 1985. To produce this net increase in gross output, the irrigated crops sector purchased a number of inputs. The suppliers of these inputs, in turn, purchased inputs, and so on. Irrigation's direct impact of $980 million, measured in net terms, triggered many rounds of additional transactions or indirect impacts for inputs of goods and services. Some of these were goods and services produced within Nebraska and some were imported. The indirect impact pertains to the total transactions generated from the spending and re-spending activities associated only with those goods and services produced within the Nebraska economy.

It was estimated from the state's 1985 input-output model that each dollar of output (gross income) from irrigated crops required on average about 4 cents of chemicals (e.g., fertilizer) from the chemicals sector, about one cent from finance and insurance, and so on. These supplying sectors in turn purchased inputs in order to produce the goods and services going to irrigated crops.

A similar wave of spending occurred from payments (income) to the household sector. It was estimated that households received about 19 cents for every dollar of irrigated crop production in 1985. Households in turn spent a substantial portion of this income on goods and services (household consumption). This household consumption had a multiplier effect on Nebraska's economy that was included as part of the indirect impact of irrigation.

The accumulated effects of these many rounds of expenditures by industry and households were estimated from the state's input-output model as industry multipliers. To determine the indirect impact of irrigated agriculture, net of dryland equivalent outputs, industry multipliers for dryland crop production and irrigated crop production were used.

By applying the irrigated and dryland industry multipliers to the irrigated crop output and dryland equivalent output, respectively, the indirect impact of irrigated crops, in net terms, was estimated. The product of the irrigated crop multiplier of $2.21 and the total value of irrigated crops from Table 1 yields the total economic impact of irrigated crops for 1985. The total impact, in gross terms, was about $4.25 billion (2.20517 x $1,926,148,500 = $4,247,484,900). The $4.25 billion figure includes both the direct and the indirect impacts.

The indirect impact is determined by subtracting the value of irrigated crop production of $1,926,148,500 (Table 1) from the total impact figure of $4,247,484,900. The difference of about $2.32 billion (or $2,321,336,400) is the indirect impact of irrigation before any adjustments for dryland equivalents. In other words, the $2.32 billion is not net of the dryland equivalent output.

The product of the dryland crop multiplier of $2.07 and the total value of the simulated dryland equivalent crop output in Table 1 gives an estimate of the total economic impact that would have occurred if irrigated land had been used for dryland production. This product is $1,956,796,900 (2.06892 x $945,806,000 = $1,956,796,900). The difference between $1,956,796,900 and the dryland equivalent output value of $945,860,000 is an estimate of the indirect economic impact for simulated dryland crop production, which is $1,010,990,900 ($1,956,796,900 - $945,806,000 = $1,010,990,900).

The indirect economic impact of irrigated crops, in net terms, can be determined by subtracting the indirect impact figure of $1,010,990,900 for simulated dryland crop production from the indirect impact figure of $2,321,336,400 for irrigated crop production. This difference is $1,310,345,500 which, in net terms, is an estimate of the indirect economic impact of irrigated crop production for Nebraska. An estimate of the total economic impact of irrigated crop production, in net terms, is the sum of the direct impact and the indirect impact, approximately $2.3 billion ($980,342,500 + $1,310,345,500 = $2,290,688,000).

An alternative way to interpret the $2.3 billion impact estimate is to think of it as the amount of economic loss that would result in Nebraska with no irrigation. This loss would represent foregone receipts and incomes for many businesses across the state.

The inter-industry information contained in an input-output model can be used to show impacts by industry. Table 4 provides a summary of these impacts for major industries.

Table 4 shows that approximately $476 million was added to Nebraska personal income in 1985 as a result of irrigation. Trade earned over $150 million in trade margins. Assuming a 14 percent average trade margin (mark-up), the $150 million represents over $1 billion in gross receipts for trade.

Table 4
Indirect Effects By Industry for 1985
($1,000s)

Industry	Impact
Manufacturing	$ 224,724.25
Transportation, Communications, and Utilities	96,179.36
Trade	154,358.70
Finance, Insurance and Real Estate	144,662.14
Services	160,910.43
Other	53,069.00
Personal Income	476,441.62
Total	$1,310,345.50

Summary

Two points need to be emphasized. First, current impacts do not include the many rounds of transactions that are associated directly and indirectly with capital expenditures (or investments). The purchase of center pivots, gated pipe, pumps, and motors that are used for irrigation contribute both directly and indirectly to Nebraska's economy. Information on expenditures for plant and equipment would be necessary to estimate the investment impacts due to irrigation.

The second point pertains to the measurement of impacts on an annual basis. The $2.3 billion net impact figure for irrigation is only for 1985. Similar impacts occur annually. The two earlier studies on irrigated agriculture and the most recent 1985 study, which is the backbone of this article, support this point.

Endnote

1. Lamphear, F. Charles and Theodore W. Roesler, "Impact Analysis of Irrigated Agriculture on Nebraska's Economy, 1967-1970," *Nebraska Economic and Business Report Number Eight* (Lincoln, NE: University of Nebraska-Lincoln, Bureau of Business Research, 1974).

F.C.L. and M.W.E.

Restoring the U.S. Competitive Edge--Part II

What we can do to restore the U.S. competitive edge in the global marketplace? U.S. corporations must set their long-term goals high and relentlessly pursue these goals. In other words, we must pursue excellence. Most of us are tired of hearing this word. But excellence is not merely a dream, euphoria, or intangible target. Excellence comes from consistent commitment to change, innovation, and small revolutions in mundane day-in and day-out quality work. We should pursue excellence in the global marketplace rather than just in our local community.

There are many exceptional U.S. firms that are dominant in the international market, such as IBM, Merck, Johnson & Johnson, 3M, Hewlett-Packard, and GE. These firms have one thing in common. They pursue excellence by relying on the talents and creativity of their employees. The development of strategies that capture the real corporate resource—human talents—is the only way to restore the U.S. competitive edge. The following should be included in our strategies:

Intrapreneurship

Intrapreneurship is a coined word representing intra-organizational entrepreneurship. Intrapreneurs are those who dream and do. To develop and encourage intrapreneurs, large corporations act as venture capitalists for the individuals with new ideas. This involves not only financial backing for individuals with visions, but it also represents the creation of an environment where a person's creativity and desire for experimentation are valued and rewarded.

There are many outstanding examples of intrapreneurship. Perhaps the best known is 3M's Art Fry, who developed Post-it notes. Other outstanding examples include DuPont's automatic chemical analyzer developed by Dick Nadeau (which brings in $300 million in sales per year), Ford's Team Taurus, and many others. U.S. corporations with successful intrapreneurship programs are rare, however. Japan's Matsushita Electric Industrial Company boasts being the company with the most employee-suggested ideas implemented. Their record is 100 suggestions per employee per year. Canon is second with 70, and Toyota follows with 50. The average number of employee suggestions implemented by U.S. corporations is 0.14 per employee per year.

Technology Management

We must do a much better job in technology management. U.S. efforts in research and development have been discipline-driven, whereas our overseas competitors have been concentrating on market-driven research and development. Basic research is necessary for applied research downstream. Nevertheless, we must streamline our research efforts to improve our competitive edge in the global market. In this regard, we must be oriented toward the long term rather than looking for short-term gains. The U.S. invented and developed robots. We sold licenses to the Japanese to build robots and further develop the technology. Since then, the U.S. has been purchasing about 70 percent of all robots in use from Japan.

Perhaps the most important area where we need definite national and corporate strategies is technology transfer from laboratories to enterprises. We have a total lack of coordinated effort in this regard. Furthermore, we have not done a good job in developing systematic interface strategies between technology and human resources. The bottleneck of our inability to fully utilize our superior technologies has been this interface management problem.

Quality Management

The emphasis of our organizations should be on the quality of their products and services. Quality is an elusive term, dependent on individual preferences and comparative perspective. A commitment to quality is essential to restore our competitive edge.

Quality requires more than just dedication; it must be embedded in corporate strategies. Contrary to the general belief that quality requires additional resources, improved quality saves money when all factors are considered. Management leadership is required in creating a corporate culture that demands and breathes quality in everything a firm does.

Quality is something that has to be built, not inspected to assure its existence. Many organizations emphasize inspection rather than helping employees do it right the first time. The critical factor for quality assurance is relegating decision making to the lowest level possible. Providing good working conditions, technical support, tools, and training is essential for high quality performance on the part of employees. Leadership does not always rest on management. The point of contact between the customer and the firm is where leadership starts. The person who greets a customer at the service counter, a telephone operator who handles in-coming calls, and an assembly line worker who handles parts with care represent those who exercise leadership.

Management by Ideology

We live in the age of information. The currency of the future society will be information. Already organizations expend approximately 70 percent of their capital investments in information-related items. This emphasis on information exacerbates our tendency to rely on tangible facts. It follows that organizations concentrate on structure, systems, and strategies—things that are clear-cut and readily discernible. These are relatively easy aspects of management, however. Things that are intangible, hard to handle, and that energize persons are difficult to manage. Corporate culture, management style, skills, and staffing philosophy come are examples.

Organizational culture represents the basic ideals, values, and philosophies that exist within an organization. It represents invisible, ambiguous, yet clearly accepted codes of behavior in the organization. Developing a constructive culture that can energize and rally every member of the organization for a common purpose is extremely important for the success of an organization. It is because of the age of information, which demands greater instrumentation and structure for the organization, that we need to pay greater attention to management by ideology.

International Perspective

We live in a very exciting time. It is the turning of an era—from a domestic age to a global age; from an industrial age to an information age; and from U.S. eminence to a network of developed nations. The key for our success is our ability to realize the interdependence among the nations of the world. Our overseas competitors need us and we also need them. It is not a zero-sum game. We can continue expanding the pie so that our piece can get bigger while theirs grows simultaneously.

We no longer dominate the world in everything. Perhaps that is better for the U.S. We need to understand the cultures and desires of the other peoples of the world. After all, we are citizens of this world. To restore our competitive edge, we must learn to speak their languages and put ourselves in their shoes. In the process, we will more than merely regain our competitive edge. We will become cosmopolitan, world class citizens.

This article is the second in a series by Dr. Sang Lee. Dr. Lee is University Eminent Scholar, Professor of Management, and Chairman of the Department of Management in the College of Business Administration at the University of Nebraska-Lincoln. Dr. Lee is also the executive director of the Nebraska Productivity and Entrepreneurship Center.

Review and Outlook

National Outlook

What a difference a month makes. Thirty days ago, I wrote a positive piece about the near term outlook for this outlook. At that time, other observers of the economic scene were writing pessimistic pieces. One leading national forecasting firm told us a recession was at hand. Now the news is filled with reports of glowing economic health. The pessimists are assuring us that the economy is too healthy and that the Federal Reserve will have to crack down.

Is there any basis for pessimism? Is there a recession looming on the horizon? If so, when will it occur? My answers are yes, probably, and who knows. I will elaborate later. First, let's review the latest economic news.

In October the Consumer Price Index rose 0.4 percent above September. That figure was 4.2 percent above the previous year's value. Omitting food and energy, the value was 4.6 percent above the year ago value. Although this is cause for concern, it is not cause for alarm. The picture is rosier when we look at the Producer Price Index. The Producer Price Index in October was unchanged from September. When compared to year ago values, the total index of finished goods advanced 2.8 percent. Crude materials increased 0.6 percent from year ago. (See Table III.)

Further good news was found in the personal income figures for October. In that month, personal income rose 1.8 percent above the previous month. A large part of the increase was due to two sources: farm payments (both regular farm payments and special drought payments) and bonuses paid to auto workers. Without those effects, the increase was 0.9 percent—still a healthy gain.

The capital goods sector also is booming. This surge is tied to increases in export activity due to the fall in value of the U.S. dollar. Industrial production in October gained 0.4 percent, raising the index to 139.2 for the month of October. That figure is 5.1 percent ahead of last year and is a full percentage point above the third quarter amount shown in Table I.

Housing starts shared in the good news for October, advancing 7.2 percent. That gain may be temporary as mortgage rates were at a seven month low. With the prime rate jump to 10.5 percent, it is reasonable to expect that the mortgage rate will reverse quickly.

Automobile sales are still off their summer pace. Nevertheless, auto producers remain optimistic. Fourth quarter plans call for an 11.6 percent increase above year ago levels. That optimism will carry through the first quarter of 1989 when auto producers expect to expand their output by nearly 14 percent from the previous year.

Capacity utilization, a measure of total industrial production relative to total industrial capacity, is now 84.0 percent. That level has not been seen since 1980. When one recalls the rates of inflation at that time, capacity utilization levels may be viewed as a sign that low inflation rates may be ending.

Let us look at possible causes for pessimism about the near term outlook. The basic thesis of the pessimists is that things have been too good for too long. They view the economy as undergoing unspecified pressures. What pressures should we be examining?

I usually start by looking at capacity utilization rates, as they seem to be a critical element in the inflation scenario. Capacity utilization rates are high. The capacity utilization index will never reach 100 percent, and many suspect that it's impossible to go as high as 90 percent. Capacity utilization of 84 percent leaves scant room for further gains. Typically, inflationary pressure is associated with capacity utilization in the low 80 percent range.

Furthermore, there is little likelihood of major capital infusions in the near term which would expand our capacity levels. In the last two years, private investment in both residential and nonresidential structures has been flat on a current dollar basis. That means that on a real-dollar basis, private construction investment has been declining. Only investment in public construction has remained on the up side in current dollars. Even that has decreased in real terms since last year. Given the length of the current expansion, it is unlikely that we will see a near term investment boom in construction.

Until now there has been little pressure on prices. The classic pattern calls for increases in primary prices working their way through finished goods. Although there had been some pressure on food prices from the drought, that pressure is now waning.

We have had good news on energy for some time. The recent OPEC agreements could reverse that. OPEC oil ministers have agreed to raise prices and limit production quotas starting January 1. We won't know how effective the agreement will be until then. In fact, the Arab Emirates have indicated that they won't comply with the agreement. The new agreement allows all members to dump on the oil market if one member is found to be cheating. Meanwhile, there is broad speculation that all members will cheat until the January 1 starting date. The near term outlook is for low energy inflation.

These conditions in the OPEC agreement and in OPEC member behavior are not the basis for a sound cartel. There is speculation that the agreement will not hold. If the agreement is maintained, estimates are that the new OPEC agreement may add 1 percent to the U.S. inflation rate.

Not much else is happening in the primary materials area. Copper prices have increased recently, but then have retrenched somewhat. Major copper producers abroad have the same nationalistic problems that characterize many of the smaller oil states. Both groups need foreign exchange brought by exports of their primary products. They also are characterized by less than stable political situations. The motive is to produce and produce. These countries want to keep their workers happy, even if it means short-term losses.

Another source of primary cost pressure is in the labor market. As reported in the last issue, there is not much happening. Union settlements so far this year have been tame.

Overall inflation rates have advanced this year. In 1986 we experienced a low 3 percent gain in prices. In 1987 we had 4 percent gains. In 1988 we are approaching 5 percent on various prices. All are still low by the standards of the late 1970s and the early 1980s.

The concern is that inflation will accelerate into the 8, 9, and 10 percent area. If that happens, what will the Federal Reserve do? Most economists blame the 1981-1982 recession on the Federal Reserve and their efforts to cure inflation. At a minimum, the severity and length of the recession are assigned to the Federal Reserve. We do not know what Alan Greenspan and his board will do.

After the stock market debacle last year, the Fed rapidly increased the supply of money. Their fear was that the stock market crash would have real effects upon the economy. Monetary growth, as measured by M2, peaked in late March. At that time, M2 was expanding at a 10 percent rate. The growth rate of M2 steadily has declined and is now in the 2 percent range.

My concern is that although 10 percent rate of expansion of M2 was too much, 2 percent may be too low. Are we back to an era when the Fed alternately slams on the brakes and floors the accelerator? It is bad enough for an economy to create its own downturns, but policy-induced downturns are nonsense. We hope that the Fed will not overreact and halt the expansion.

That brings us to government policy. The political scene over the last three decades has witnessed a reversal of the political parties. In the early 1950s and 1960s, Democrats argued that balancing the budget wasn't a priority—expanding the economy was. Republicans then advocated strictly balanced budgets. Today the roles are almost reversed.

Two items about the federal deficit are bothersome. One is that the net interest paid on the debt has risen from 7 percent of the total federal budget in 1963 to around 14 percent today. Second, although 25 years ago a small percentage of those interest payments went to foreigners (and, therefore, federal interest payments recirculated within the U.S. economy), payment to foreigners has risen substantially.

I am concerned about the upcoming budget. If the president-elect's campaign rhetoric holds, he is unwilling to raise taxes, doesn't want to touch the military budget, can't do anything about interest payments, and will have a hard time getting at off-budget items. That leaves only 40 percent of the federal budget that can be cut. If the goal were a 10 percent cut in total federal spending, the touchable items would have to be reduced 25 percent. A cut of that size in the short run would devastate most government programs. Perhaps that is why some individuals believe that taxes must be raised in order to cure the deficit problem.

Suppose that the pessimists are correct and the recession begins in either 1989 or 1990. Is it appropriate to raise taxes and cut government spending during a recession? The Keynesian answer is no. The time for budget balancing is in an expansion, not a downturn. We have had six years of expansion to do something about the deficit, yet nothing effective has been done.

We have strayed from our original answers to questions, but I think we have reinforced the idea that a recession is possible. Our argument is that it is likely to be a recession based on bad policy ... an overreaction to bad short-term news or wrong policy for the times.

How likely is a recession? Unfortunately, I think that there is a strong possibility of a recession in the near term. Economic theory says that a balancing act at a right rate of growth is a possibility. Some believe that right rate is under 3 percent. Could we maintain a 2 to 2.5 percent growth rate indefinitely? Perhaps. But the economy does not run smoothly. Sectors move out of balance. We have noted that housing has been on a long-term down trend over the last couple of years. At a mature stage in the business cycle, the economy is especially vulnerable to shocks. These shocks can be external (such as the Arab oil embargo over a decade ago) or they can be due to internal policy. A long-term balancing act is hard to perform.

When will a recession happen? A look at the forecasting record of selected economists in the early 1980s reveals that pinpointing a recession is nearly impossible. Economists generally predicted the overall size of the 1980 downturn correctly. But they were wrong in projecting the timing of that recession. That recession was unusual. There was a single large quarter downturn of 9 percent, at annual rates, in the second quarter in 1980.

The record of forecasters for the 1981-1982 recession is not as good. Virtually all the forecasters missed the start of that recession; once it began, they missed the duration of that recession. At the end of 1981, when the forecasters had an opportunity to state their outlook for 1982, nearly all expected the economy to recover. It did not—the recession continued nearly the entire year. That leaves the score one out of two for calling recessions with no bonus points for timing in either case. If that is not a sufficient example of bad forecasting, let me point out that we have had doomsayers forecasting downturns for the last two years.

My conclusion is that a recession is possible in the near term and even likely. When it will start is hard to know. We expect to see more conditions in evidence before we would say that a downturn is imminent. Outside some large external shock, the things to watch for are an increase in inflation and the response of the Federal Reserve. The latter is indicated by either changes in the growth rates of money supply or rapid changes in interest rates.

Nebraska Outlook

Nebraska continued to experience good news. Unemployment rates remain low in the state, both in the metro and nonmetro area. The state unemployment rate for October remained at 3.2 percent, compared to the national level of unemployment in October of 5.3 percent. National unemployment in November advanced to 5.4 percent. Nebraska remains well below national standards for unemployment.

Retail sales in Nebraska in the month of August rose substantially. The gain in retail sales was led by motor vehicle sales which were 16.4 percent above year ago levels. Motor vehicle sales are likely to dip in September and perhaps again in October, reflecting national trends in automobile sales. Nonmotor vehicle sales advanced 5.4 percent in the month of August. That figure shows only a slight improvement above rates of inflation experienced over the year. Building activity in the state remains strong, especially outside the metropolitan areas.

How do we relate activity in the national economy to the state economy? The nonagricultural sector of the Nebraska economy is likely to broadly parallel movements in the national economy. Because Nebraska tends to be more service dominated than the nation, we may weather a future recession fairly well. The Nebraska manufacturing sector tends to be dominated by food manufacturing, a segment showing less cyclicality than other manufacturing. I hesitate to use the words "recession-proof" because they can return to haunt us in the future; nevertheless, Nebraska stands to do well over the near term. That is not to say that some sectors won't suffer under a future downturn. In particular, housing and construction in general tend to be hit hard by high interest rates that characterize early stages of downturns.

The agricultural outlook for the state is somewhat less sanguine. Although there may be some Nebraska farmers,

Table I
National Indicators

	Annual		Quarterly (SAAR)		
	1986	1987	1988I	1988II	1988III
Real GNP (% change)	2.8	3.4	3.4	3.0	2.6
Real Consumption (% change)	4.3	2.7	4.5	3.0	4.0
Housing Starts (millions)	1.81	1.62	1.48	1.48	1.45
Auto Sales (millions)	11.4	10.3	10.8	10.6	10.6
Interest Rate (90 day T-Bill)	5.96	5.82	5.76	6.23	6.99
Unemployment Rate (%)	7.0	6.2	5.7	5.4	5.5
Industrial Production Index (1977=100)	125.1	129.8	134.5	136.0	138.2
Money Supply, M2 (% change)	8.1	6.5	6.8	7.7	3.7

especially on the eastern edge of the state, who have been hurt by the drought, others in the state will do well. Overall, there is a good likelihood that Nebraska farm income this year will exceed that of last year. The retail sales boom shown in the Nebraska data, especially for automobiles and trucks, may be related to a surge in agricultural income.

This leads us to a note of caution. There should be a commensurate surge in Nebraska tax receipts related to any jump in Nebraska farm income. If such a surge does materialize, it is likely to be temporary in nature. It is not a reliable source of of income for future spending. Therefore, any use made of the increase in state funds that are attributable to a drought-related surge in agricultural income should be of a temporary nature. That is why some persons advocate a temporary tax refund. A short-lived public construction project is another possibility.

For next year, the outlook for the Nebraska agricultural sector may entail a downturn in farm income. A recent forecast called for a 10 percent drop in national farm income. If that forecast is correct, Nebraska likely will share in that drop.

How Nebraska retailers will fare during the Christmas rush is now anyone's guess. As you can see from the scoreboard data, there is a significant lag in our receipt of current data. It will be several months before we know the results of the Santa syndrome in our state. We hope the Nebraska shopper will continue to create the strong spending patterns seen in recent months.

J.S.A.

Thanks...

To those stalwart readers who responded to our request for comments on *Business in Nebraska*. We appreciate the suggestions for future articles. We love the compliments. For those of you who had the best of intentions of writing us but thought the deadline had passed, you were wrong. We would still like to hear from you.

Terms to Know

Deficiency Payments

A key provision in the federal government's farm program is the establishment of target prices for grains. These prices are one entry in the formula for determining the deficiency payments made to participating grain producers. The market price and loan rate of the grain are the two other prices that enter the formula. The loan rate is the price that a producer receives for putting the grain into the government storage program.

The first part of the deficiency payment formula is the difference between the target price of the grain and the higher of the market price or loan rate. This difference is known as the payment rate. The payment rate (per bushel basis) is multiplied by the payment yield (bushels per acre) established for the farm. This result is multiplied by the farm program acreage. The final result is the deficiency payment.

A portion of the payment usually is made at the time the producer enrolls in the program prior to planting the crop. This portion is known as the advance deficiency payment and is based on projected yields and prices. The remaining portions of the payment are paid as the marketing year of the crop progresses. Corn, sorghum, wheat, barley, and oats are program crops in Nebraska with deficiency payment provisions.

Deficiency payments received by Nebraska producers have been running at high levels in recent years due to the relatively wide spreads between target prices and market prices or loan rates. It is estimated that deficiency payments to Nebraska producers in calendar year 1988 will be in the range of $1.0 to $1.1 billion. This payment level is about four percent of the total income of the Nebraska economy. The critical role of deficiency

(continued on page 9)

Table II
Employment in Nebraska

	Revised Sept. 1988	Preliminary Oct. 1988	Oct. % Change vs. Year Ago
Place of Work			
Nonfarm	672,296	675,730	1.0
Manufacturing	93,344	94,000	3.5
Durables	46,339	46,365	5.5
Nondurables	47,005	47,635	1.6
Mining	1,717	1,624	-5.2
Construction	25,268	25,098	-0.8
TCU*	44,240	44,919	2.5
Trade	171,690	172,345	0.1
Wholesale	48,040	48,196	1.5
Retail	123,650	124,149	-0.4
FIRE**	48,214	48,168	1.4
Services	150,027	149,178	-0.6
Government	137,796	140,398	1.9
Place of Residence			
Civilian Labor Force	817,758	828,418	0.6
Unemployment Rate	3.2%	3.2%	

*Transportation, Communication, and Utilities
**Finance, Insurance, and Real Estate

Source: Nebraska Department of Labor

Table III
Price Indices

	Oct. 1988	% Change vs. Year Ago	YTD % Change vs. Year Ago
Consumer Price Index - U* (1982-84 = 100)			
All Items	120.2	4.2	4.0
Commodities	113.5	3.8	3.5
Services	127.6	4.7	4.5
Producer Price Index (1982 = 100)			
Finished Goods	109.3	2.8	2.2
Intermediate Materials	108.6	5.3	5.4
Crude Materials	95.8	0.6	2.7
Ag Prices Received (1977 = 100)			
Nebraska	156	17.3	11.6
Crops	139	59.8	36.3
Livestock	166	2.5	3.1
United States	144	13.4	8.5
Crops	135	27.4	18.5
Livestock	153	4.1	1.6

U* = All urban consumers
Source: U.S. Bureau of Labor Statistics

Personnel (continued)

in the UN-L College of Journalism, Young's career has covered both advertising and editorial work.

Bureau newcomer Barbara Sumsion is a California native who attended San Jose City College and holds a degree from Heald College. She brings a wealth of experience to the Bureau, including layout, pasteup, and typesetting skills gained from her employment at Springfield Printing.

The Bureau publication staff also assists with special projects and reports. These cover a broad spectrum of topics, ranging from the economic impact of the University of Nebraska Medical Center to projections of population and income for the state in upcoming years.

State to Age Seven Years in the Next 24 Years

An individual gets one year older every year, but the state will take over three years to advance one year in average age. According to projections recently released by the U.S. Bureau of the Census, Nebraska's population is expected to decrease slightly from 1,598,000 in 1986 to 1,529,000 in 2010. The number of residents over 40 years of age, however, is projected to increase. Consequently, the median age for the state will increase from 31.6 years in 1986 to 38.4 years in 2010. For more details on the future mix of population, contact the Bureau of Business Research.

Payments (continued)

payments in the health of Nebraska's economy is apparent. Declines in deficiency payment levels without fully compensating gains in market prices would have adverse effects on the Nebraska economy.

J.R.S.

Table IV
City Business Indicators
August 1988 Percent Change from Year Ago

The State and Its Trading Centers	Employment (1)	Building Activity (2)
NEBRASKA	1.5	9.0
Alliance	0.2	49.3
Beatrice	-0.1	192.6
Bellevue	3.1	104.8
Blair	3.1	-58.3
Broken Bow	-1.1	-86.8
Chadron	2.6	-82.2
Columbus	7.6	59.0
Fairbury	-1.3	2,387.7
Falls City	-1.4	95.0
Fremont	-0.5	9.8
Grand Island	0.0	27.6
Hastings	-1.3	46.2
Holdrege	-0.8	36.2
Kearney	-0.4	103.9
Lexington	-1.5	228.1
Lincoln	2.1	-7.2
McCook	-2.0	82.5
Nebraska City	-0.9	-13.9
Norfolk	-0.4	-20.7
North Platte	0.0	71.2
Omaha	3.1	-2.6
Scottsbluff/Gering	-0.8	-6.5
Seward	-1.3	-14.3
Sidney	-0.9	-9.6
South Sioux City	3.4	107.8
York	-0.9	-69.4

(1)As a proxy for city employment, total employment (labor force basis) for the county in which a city is located is used.

(2)Building activity is the value of building permits issued as a spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Cost Index is used to adjust construction activity for price changes.

Sources: Nebraska Department of Labor and reports from private and public agencies.

Figure I
City Business Index
August 1988 Percent Change from Year Ago

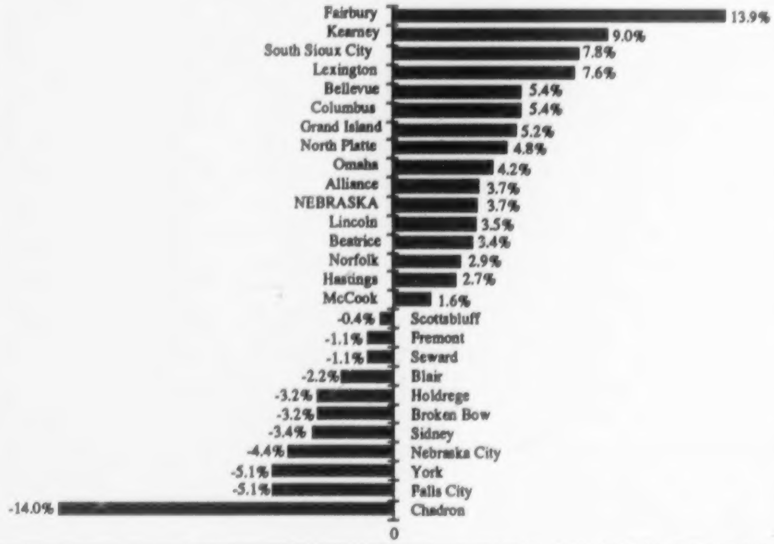
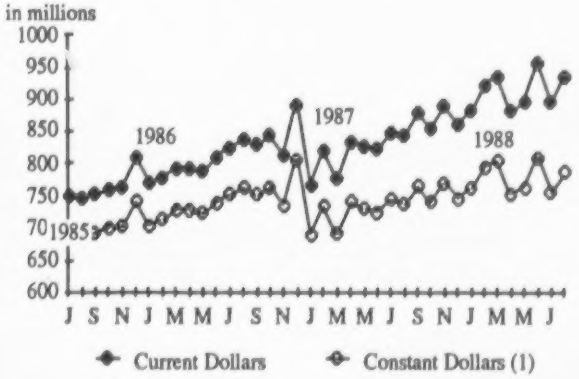


Table V
Net Taxable Retail Sales of Nebraska Regions and Cities

Region Number and City (1)	City Sales (2) Aug. 1988 (000s)	City Sales (2) % Change vs. Year Ago	Region Sales (2) Aug. 1988 (000s)	Region Sales (2) % Change vs. Year Ago	YTD % Change vs. Year Ago
NEBRASKA	$838,916	9.6	$974,185	11.1	11.7
1 Omaha	294,462	10.3	368,497	10.9	8.9
Bellevue	12,574	4.7	*	*	*
Blair	3,869	5.0	*	*	*
2 Lincoln	120,049	10.1	139,157	12.7	12.9
3 South Sioux City	4,396	9.7	6,549	10.1	20.7
4 Nebraska City	3,585	-4.1	17,746	5.2	8.3
6 Fremont	14,460	0.2	27,431	5.1	13.0
West Point	2,430	12.7	*	*	*
7 Falls City	1,753	-14.4	7,952	-7.0	5.3
8 Seward	3,886	4.0	14,188	11.5	12.2
York	6,583	5.6	15,491	9.6	12.2
10 Columbus	13,565	3.0	25,052	6.5	14.8
11 Norfolk	18,062	13.1	32,121	13.5	17.4
Wayne	2,474	-0.6	*	*	*
12 Grand Island	33,713	12.8	48,301	16.3	15.7
13 Hastings	15,087	6.9	23,992	6.1	10.5
14 Beatrice	7,021	-0.7	16,998	4.6	9.3
Fairbury	2,645	0.9	*	*	*
15 Kearney	19,911	16.9	28,205	16.2	18.9
16 Lexington	5,584	9.3	15,627	13.5	19.8
17 Holdrege	3,813	-6.6	7,802	5.1	11.5
18 North Platte	15,534	8.5	19,795	12.7	16.1
19 Ogallala	5,740	6.3	11,290	10.6	13.1
20 McCook	7,661	2.4	11,096	4.4	16.4
21 Sidney	3,814	-2.4	8,438	2.3	8.3
Kimball	1,933	-4.0	*	*	*
22 Scottsbluff/Gering	16,980	4.0	24,425	6.8	6.8
23 Alliance	5,055	7.3	13,897	6.2	11.5
Chadron	2,694	-12.4	*	*	*
24 O'Neill	3,749	4.9	12,984	10.1	15.8
Valentine	2,432	10.4	*	*	*
25 Hartington	1,430	15.0	8,415	5.2	9.2
26 Broken Bow	3,193	19.9	11,772	17.5	20.4

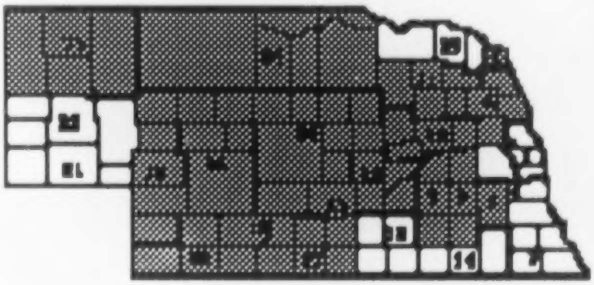
(1) See region map.
(2) Sales on which sales taxes are collected by retailers located in the state. Region totals include motor vehicle sales.
* Within an already designated region.
Compiled from data provided by the Nebraska Department of Revenue

Figure II
Nebraska Net Taxable Retail Sales
(Seasonally Adjusted)



(1)The Consumer Price Index (1982-84 =100) is used to deflate current dollars into constant dollars

Figure III
Region Sales Pattern
YTD as Percent Change from Year Ago



Shaded areas are those with sales gains above the state average.

The Bureau of Business Research announces a conference on the state of the state—a look at how Nebraska's economy works and where it is heading

PROJECTIONS AND CHOICES

Thursday, January 26, 1989, 8:15 a.m. to 3:00 p.m., lunch included
Nebraska Center, 33rd & Holdrege, Lincoln, NE

A notable group of authorities will address the critical decisions facing all Nebraska leaders, in both the public and private sectors. Short- and long-term projections of Nebraska economic trends will be analyzed to determine the changes Nebraskans must make in order to meet the challenges posed by movements in the national and international economies. Conferences highlights include:

***Historical Labor Trends in Nebraska**
Tom Maloney, Nebraska Department of Labor

***Growth Patterns of the Nebraska Economy**
John S. Austin, UN-L Bureau of Business Research

***Prospects in the Ag Sector**
Roy Frederick, Nebraska Department of Agriculture

***Demographic Changes in Nebraska**
Jerry Deichert, UNO Center for Applied Urban Research

***Economic Projections for Nebraska**
James R. Schmidt, UN-L Bureau of Business Research

***A Model of New Nebraska Industry**
F. Charles Lamphear, UN-L Bureau of Business Research

***Educating the New Labor Force**
Stuart Miller, Nebraska Department of Economic Development

***Business Leader Review Panel**
Robert B. Harris, Harris Technology Group;
Thomas Henning, NBC;
Don E. Schaufelberger, NPPD

Register now for this exciting look at Nebraska's future--advance registration is required

The registration fee for the **Projections and Choices** conference is $40.00 per person. This cost covers registration, materials, lunch, and coffee breaks. Checks or purchase orders are acceptable, or we can bill your organization. For further information, call the UN-L Bureau of Business Research at 402/472-2334. Return your registration form to:

Bureau of Business Research
University of Nebraska-Lincoln
Room 200 College of Business Administration
Lincoln, NE 68588-0406

Name:..

Organization:..Telephone:.........................

Mailing address:...

City:...State:...................................Zip:...............

Lodging is available at $36.00 per night at the Nebraska Center. Call 402/472-2949 for further information about lodging.

Scoreboard

Percent change from one year ago

	State	Metro+	Nonmetro
Motor Vehicle Sales (Aug.) Constant $	↑ 16.4%	↑ 17.1%	↑ 15.8%
Nonmotor Vehicle Sales (Aug.) Constant $	↑ 5.4%	↑ 5.8%	↑ 4.9%
Building Activity (Aug.) Constant $	↑ 8.3%	↓ -2.6%	↑ 28.4%
Employment (Oct.)	↑ 1.5%	↑ 2.9%	↑ 0.2%
Unemployment Rate* (Oct.)	unchanged 3.2%	↑ 3.3%	↓ 3.0%

+Omaha and Lincoln
*Unemployment is this month's rate, not a percent change from year ago

Bureau Personnel Notes:

Margo Young and Barbara Sumsion

One of the most important components of the outreach function of the Bureau of Business Research is its publication division. Margo Young, editorial assistant, and Barbara Sumsion, composing technician, form the backbone of this field at the Bureau. Working with authors from the College of Business Administration, the Institute of Agriculture, the Nebraska Department of Labor, and other companies, they strive to produce quality works designed to meet the diverse and growing needs of the Nebraska business and academic communities.

The Bureau of Business Research produces four regular publications:

**Business in Nebraska* is a monthly newsletter in its 44th year. It is designed to serve the general business community.

**Quarterly Journal of Business and Economics* (formerly the *Nebraska Journal of Economics and Business*) has been housed in the Bureau for more than a quarter of a century. The Bureau coordinates the efforts of many departments within the College of Business Administration, especially the Department of Finance and the Department of Economics, to make this a respected scholarly journal. Editor George M. McCabe stresses the importance of empirical studies that replicate previous work in the QJBE.

*The Bureau staff also assists George E. Rejda of the Department of Economics to review and edit articles for *Benefits Quarterly*, published by the International Society of Certified Employee Benefit Specialists. Primary readership includes academics and employee benefit practitioners.

**Regional Science Perspectives* is an established publication new to the Bureau of Business Research. Bureau director F. Charles Lamphear edits this journal, which emphasizes regional economic studies.

Margo Young is a journalism graduate of the University of Nebraska-Lincoln whose history includes a long stint with an outstate Nebraska daily newspaper. Currently a graduate student

(continued on page 9)

Business
in
Nebraska

PREPARED BY BUREAU OF BUSINESS RESEARCH
Association for University Business & Economic Research

Business in Nebraska is issued as a public service and mailed free of charge upon request to 200 CBA, University of Nebraska-Lincoln, Lincoln, NE 68588-0406. Copyright 1988 by Bureau of Business Research, University of Nebraska-Lincoln.

December 1988, Volume 44 No. 531

University of Nebraska-Lincoln-- Martin Massengale, *Chancellor*
College of Business Administration--Gary Schwendiman, *Dean*

Bureau of Business Research
F. Charles Lamphear, *Interim Director*
James R. Schmidt, *Acting Associate Director*
Merlin W. Erickson, *Research Associate*
Margo Young, *Editorial Assistant*
John S. Austin, *Statistical Coordinator*
David D. DeFruiter, *Statistical Technician*

The University of Nebraska-Lincoln does not discriminate in its academic, admission, or employment programs and abides by all federal regulations pertaining to same.

Non-Profit Org.
U. S. Postage
PAID
Lincoln, Nebraska
Permit No. 46

CONGRESSIONAL INFO SERVIC 270238
* SRI BR
* 4520 EAST-WEST HWY
* BETHESDA, MD 20814

U7860-1
2/9/89

Business In Nebraska

January 1989
Vol. 44 No. 532

Prepared by the Bureau of Business Research
200 College of Business Administration
University of Nebraska-Lincoln
Lincoln, NE 68588-0406
402/472-2334

Nebraska Economic Projections for 1989

James R. Schmidt
Acting Associate Director of the UN-L Bureau of Business Research and
Associate Professor of Economics

Summary of Nebraska Projections

*Gross State Product in real terms will grow 2.5 percent to $25.3 billion.
*The number of nonfarm wage and salary jobs will increase to an annual average of 677,800.
*The number of employed persons will grow to an annual average of 785,250.
*The unemployment rate will increase to 4.1 percent.
*Total personal income will rise 6.8 percent (in current dollars) to $26.0 billion.
*Net taxable retail sales will grow 5.3 percent and reach $11.750 billion.

Overview

The Nebraska economy enjoyed a prosperous year in 1988, posting gains in gross product, income, employment, and retail sales. Prosperity was not equally distributed among industries, but on balance the economy performed well. The drought hit certain areas of the state hard, but severe damage was not widespread enough to jeopardize farm income levels. A strong national economy provided much of the stimulus that moved Nebraska ahead. Tax incentive legislation also provided positive influences upon growth in the state economy.

As 1989 gets underway, the intriguing question is whether the state economy will be able to match the performance of 1988. Part of the answer lies in the prospects for the national economy. Analysts of the national economy are offering a mixed bag of projections. Most view the first quarter of 1989 as a period of strong growth, but foresee lower growth rates for the later quarters of the year. The annual growth rate for 1989 should be respectable. Recession has returned to the vocabularies of many national observers, but onset of a recession apparently has been pushed into early 1990. This article is concerned with the specifics of the state economy in 1989. A focused review of the national scene is contained in the Review and Outlook section following this article.

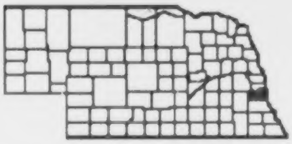
The projections of 1989 activity in Nebraska presented below are products of the Nebraska econometric model, a projections and impact analysis system constructed by the author. Four broad categories of economic indicators will be addressed: Gross State Product, jobs and employment, personal income, and net taxable retail sales. On balance, all of the economic indicators point to another year of growth for the Nebraska economy, although the growth rates of several of the indicators will fall a bit short of their 1988 rates.

Gross State Product

Gross State Product (GSP) is the most comprehensive measure of state economic activity available and is defined as the gross market value of the goods and services attributable to labor and property located in a state. In essence, GSP is the state's version of Gross National Product, the broad national economic barometer. Prior to 1988, GSP was not an official information product of the Bureau of Economic Analysis (BEA), collector and purveyor of much regional economic data. In the spring of 1988, BEA released the results of a project that calculated the GSP of every state for each year during the 1963-1986 span. Prior to the release, economists had been making independent estimates of GSP using several methods. These efforts will continue,

County of the Month

Cass



Size of county: 564 square miles, ranks 67th in the state

Population: 22,200 (estimated) in 1987, a change of +9.2 percent from 1980

Median age: 30.9 years in Cass County, 29.7 years in Nebraska in 1980

Per capita personal income: $12,390 in 1986, ranks 65th in the state

Unemployment rate: 6.8 percent in Cass County, 4.9 percent in Nebraska for 1987

Net taxable retail sales ($000): $61,250 in 1987, a change of +1.4 percent from 1986; $49,998 during January-September 1988, a change of +7.7 percent from the same period one year ago

Nonfarm employment (1987):

	State	Cass County
Wage & salary workers	659,223	3,215
	(percent of total)	
Manufacturing	13.3%	10.2%
Construction and Mining	3.9	6.8
TCU	6.5	6.1
Retail Trade	18.7	20.4
Wholesale Trade	7.1	6.8
FIRE	7.3	4.5
Services	22.7	14.8
Government	20.5	30.4
Total	100.0%	100.0%

Agriculture:

Number of farms: 915 in 1982, 977 in 1978
Average farm size: 346 acres in 1982
Market value of farm products sold: $74.1 million in 1982 ($80,948 average per farm)

Sources:
Bureau of the Census: *Area Measurement Reports*, 1970; *Census of Agriculture*, 1982; *Census of Population*, 1980; *County Population Estimates*, July 1, 1987
Bureau of Economic Analysis: *Survey of Current Business*, April 1988
Nebraska Department of Labor: *Labor Market Summary Report*, 1987
Nebraska Department of Revenue: *Net Taxable Sales*

ERRATA: December 1988 issue, Pierce County net taxable retail sales ($000) during January-August 1988 were $18,360, not $19,938

Merlin W. Erickson

Projections (continued)

but now will focus on reducing the significant time lag in BEA's release of the official figures.

GSP figures are available by industry, thereby allowing analyses and projections of industry output levels within Nebraska. The common frame of reference for GSP figures is real (or constant) dollars—for this purpose, the base year of 1982 is used. Table 1 contains the GSP figures from the last several years for Nebraska industries. The first item from the table to focus upon is the total GSP for the state. In 1986, Nebraska GSP reached $23.7 billion, having grown 1.6 percent from 1985. In contrast, Gross National Product in the U.S. grew 2.8 percent over the same period. In 1987, GSP grew an estimated 1.7 percent from 1986, but once again the annual growth rate of Gross National Product in this period was higher, 3.4 percent. Finally, the growth gap continued 1987-1988—estimated GSP growth reached 2.6 percent, but was surpassed by Gross National Product growth of 3.9 percent. The trend of Nebraska economic growth rates lagging those of the U.S. during the recent years is firmly established. Perhaps most interesting (and disconcerting) is that these growth lags occurred in the midst of a sustained agricultural sector recovery. Had the agriculture sector not been on the upward move, the growth gap would have been even more pronounced.

Total GSP for Nebraska in 1989 is projected to be $25.3 billion, representing a gain of 2.5 percent over the level of real activity in 1988. This growth rate is just slightly below the 2.6 percent rate estimated for the 1987-1988 span. When all the final figures are in, 1988 will be seen to have been a very good year for the Nebraska economy. Thus, a projected growth rate close to the one posted in 1988 indicates continued strength and vigor in the economy. Furthermore, the 2.5 percent growth rate for 1989 looks good when compared with the average annual growth rate of 2.0 percent that prevailed during the recent span of 1985-1988. The growth rate for 1989 also exceeds the compounded annual growth rate of 1.7 percent over the longer historical period of 1979-1988.

Although the growth path of the Nebraska economy looks strong for the coming year, it again will fall short of the growth rate of the U.S. economy. Real Gross National Product is expected to advance 2.9 percent in 1989. Without major changes, the pattern of Nebraska lagging the pace of the U.S. appears destined to continue.

The figures in Table 1 show that manufacturing is expected to do particularly well in 1989, led by a 5.3 percent gain in the gross product of the nondurables component. Durables manufacturing is close behind with an anticipated 4.8 percent gain in gross product. Thus, a continuation of the manufacturing surge in the Nebraska economy seems to be in place for 1989. This spurt began in durables manufacturing during 1987, as gross product advanced 2.5 percent over the 1986 level. Growth then accelerated to a 5.6 percent pace in 1988. Nondurables manufacturing growth was flat in 1987 and waited until 1988 to get underway—generating a 5.4 percent growth over 1987 levels. Nebraska manufacturing is tied closely to the national economy. The strong and sustained national growth has accelerated manufacturing activity in the state.

The second tier of industries projected to have higher than average growth rates of gross product in 1989 are wholesale trade; services; federal government; finance, insurance, and real estate (FIRE); and transportation, communication, and utilities (TCU). These industries will have growth rates around 3.0 percent, with TCU leading the group with a rate of 3.7 percent. With the exception of services, the 1989 growth rate of each industry in the group will exceed the average annual rate over the 1985-1988 period. Services was the second fastest growing of all industries during the 1985-1988 period, and its anticipated growth of 3.2 percent in 1989 is certainly not meager.

Mining, construction, retail trade, and state and local government constitute a third tier of industries characterized by growth rates in gross product that will fall below 2.0 percent for 1989. Retail trade has demonstrated below average growth in

Table 1
Gross State Product by Industry in Nebraska
(millions of 1982 dollars)

Industry	1985	1986	1987*	1988*	1989	% Change 1988-1989	Average Annual % Change 1985-1988
Farm	3,410	3,538	3,657	3,625	3,575	-1.4%	2.1%
Agricultural Services	120	125	122	118	116	-1.7	-0.5
Mining	87	79	83	85	86	1.2	-0.6
Construction	846	814	806	799	801	0.3	-1.9
Durables Manufacturing	1,968	2,040	2,092	2,210	2,316	4.8	3.9
Nondurables Manufacturing	1,595	1,593	1,606	1,692	1,781	5.3	2.0
Transportation, Communication, Utilities	2,582	2,576	2,593	2,702	2,802	3.7	1.5
Wholesale Trade	1,778	1,795	1,832	1,886	1,941	2.9	2.0
Retail Trade	2,041	2,098	2,100	2,130	2,162	1.5	1.4
Finance, Insurance, Real Estate	3,554	3,633	3,646	3,760	3,879	3.2	1.9
Services	2,818	2,899	3,039	3,126	3,226	3.2	3.5
Federal Government	484	501	511	525	542	3.2	2.7
State and Local Government	2,018	1,981	1,993	2,044	2,083	1.9	0.4
Nebraska Total GSP**	23,300	23,673	24,080	24,705	25,311	2.5	2.0
U.S. Total Gross National Product (billions of 1982 dollars)	3,619	3,722	3,847	3,998	4,114	2.9	3.4

*Figures for 1987 and 1988 are estimates made in advance of official releases.
** Totals may not add due to rounding.
Sources: Bureau of Economic Analysis: April 1988 release of Gross State Product. Projections from the Nebraska econometric model.

gross product during recent years, and the trend will continue into 1989. Decline in the real wage rate in retail trade over the past several years has been a major factor contributing to below average growth. Mining continues to be an erratic industry, with oil price movements being the major factor determining gains or losses in gross product. Construction also has behaved erratically over the past several years, but the discernable trend has been a downward one. The projection for 1989 calls for at least a temporary end to the slide in the construction sector, but a strong recovery is not likely in the immediate future.

The final group of industries contains the two that will experience declines in gross product during 1989: farm and agricultural services. Both industries will be the victims of steep rises in their price deflators. Although the gross products of these industries in current dollar terms will grow during 1988, the respective price deflators will rise more quickly and cancel any gains in real terms.

Employment

Employment figures for the state are collected routinely and reported on two bases: place of work and place of residence. Figures on the place of work basis are counts of the number of nonfarm wage and salary jobs in Nebraska. It is this definition of the word *jobs* that is used in what follows. The number of jobs is not a count of Nebraskans holding jobs, as out-of-state residents may hold jobs in Nebraska. In addition, persons can hold more than one job, and they can hold jobs outside the state. One can not equate the number of jobs with the number of Nebraskans having employment. In contrast, employment figures on the place of residence basis are counts of Nebraskans who are participating in the labor force, are employed, or are unemployed. To limit confusion, use of the term *employment* is confined to the place of residence basis, i.e., employment or the number of employed refer to the number of Nebraskans holding jobs.

Table 2 contains the numbers of jobs in the respective nonfarm industries of Nebraska. Also given are figures on the number of Nebraskans in the labor force, the number employed, the number unemployed, and the unemployment rate. Although the official figures for 1988 are not yet known, the annual average number of jobs in Nebraska is estimated to have risen to 669,250 in 1988, a gain of roughly 10,000 jobs over 1987. This gain in jobs was the strongest since the 1984-1985 period (when the gain was even more impressive at roughly 15,000). That gain in turn was topped by the movement between 1983 and 1984, when close to 25,000 jobs were added. These historical episodes lend perspective to the most recent experiences. But a gain of 10,000 jobs in one year is a strong showing for the Nebraska economy and is one more indication that 1988 was a year of prosperity. Both manufacturing categories, durables and nondurables, enjoyed particularly impressive gains of about 2,700 and 1,750 jobs, respectively. Thus, the manufacturing surge noted in the section on gross product is also evident in the job figures. Increased labor demands that typically accompany a thriving economy helped to create the job gains. Also contributing were the pieces of tax incentive legislation (LB775, etc.) that are keyed to job creation. Recent reports indicate that a significant number of jobs pledged by qualifying firms have materialized. The fact that a significant portion of the LB775 applications involves projects in the manufacturing industries is consistent with the growth in the job counts for manufacturing during 1988.

The 1989 projection of the annual average number of jobs is 677,803. This figure represents a gain of about 8,550 jobs over the expected 1988 level. Thus, the pace of job creation will slow in 1989, but a growth rate of 1.3 percent is still above the average

Table 2
Jobs and Employment in Nebraska
(annual averages)

	1985	1986	1987	1988*	1989	% Change 1988-1989	Average Annual % Change 1985-1988
By Place of Work							
(count of jobs)							
Mining	1,872	1,723	1,665	1,665	1,665	0.0%	-3.8%
Construction	26,148	24,598	23,877	23,844	23,227	-2.6	-3.0
Durables Manufacturing	44,042	41,314	43,089	45,772	46,997	2.7	1.4
Nondurables Manufacturing	44,369	44,612	44,901	46,655	48,059	3.0	1.7
TCU	43,854	42,669	42,828	43,821	44,671	1.9	0.0
Wholesale Trade	47,578	46,818	46,922	48,086	48,854	1.6	0.4
Retail Trade	121,380	122,240	123,246	123,259	124,155	0.7	0.5
FIRE	45,372	46,828	47,794	48,157	49,623	3.0	2.0
Services	142,152	146,715	149,468	150,039	151,768	1.2	1.8
Federal Government-Civilian	16,951	17,572	17,791	17,552	17,782	1.3	1.2
State and Local Government	116,841	117,311	117,472	120,400	121,002	0.5	1.0
Total Nonfarm Wage & Salary	650,558	652,399	659,223	669,250	677,803	1.3	1.0
By Place of Residence							
(count of persons)							
Labor Force	804,000	813,000	811,000	808,983	818,298	1.2	0.2
Unemployment	44,000	41,000	40,000	30,296	33,045	9.1	-11.2
Unemployment Rate	5.5	5.0	4.9	3.7	4.1		
Employment	760,000	772,000	771,000	778,687	785,254	0.8	0.8
Farm	75,218	73,122	70,946	74,740	71,017	-5.0	-0.1
Nonfarm Wage & Salary	610,443	619,477	620,244	623,682	633,460	1.6	0.7
All Other Nonfarm	74,339	79,400	79,809	80,265	80,777	0.6	2.6

*Figures for 1988 are estimates made in advance of official releases.
Sources: Nebraska Department of Labor. Projections from the Nebraska econometric model.

annual growth rate of 1.0 percent of the 1985-1988 span. Among the individual industries, nondurables manufacturing and the finance, insurance, and real estate sectors will lead with 3.0 percent gains in jobs. Close behind in terms of job gains is durables manufacturing with an expected advance of 2.7 percent. Thus, the manufacturing industries will continue to be major contributors to job growth in Nebraska. That contribution is certainly a turnaround from the experiences in the early part of the decade when the number of manufacturing jobs suffered serious declines from the peak levels of 1979. The nondurables jobs projection of slightly over 48,000 for 1989 exceeds the 1979 peak, but the durables category of manufacturing has further to go to surpass its previous high.

Other industries with annual percentage gains in jobs for 1989 above that of the state total include wholesale trade and TCU. Notably missing from the higher growth group is services, the employment conversation piece of the 1980s. Job growth in services slowed markedly in 1988. Resurgence is anticipated for 1989, but not enough to generate growth on the same scale witnessed in the earlier years of the decade. Construction, retail trade, and state and local government will post percentage gains in jobs below that of the state total, with the construction job count continuing to decline. This pattern has been in place since 1980, with a temporary interruption in the mid-1980s.

On the place of residence basis (bottom portion of Table 2), employment showed a strong gain 1987-1988 with the addition of almost 7,700 persons holding jobs. The labor force declined slightly in 1988, leaving the unemployment rate just below 4.0 percent for the year. A large portion of the employment gain came in the farm sector, where roughly 3,800 more persons were working on an annual average basis than in 1987. That increase represents a strong, but temporary, departure from the long-term trend of employment declines in the farm sector. The employment gain in the nonfarm wage and salary category for 1988 was roughly 3,400 persons, a gain comparable to that achieved by the farm sector. This 3,400 job gain provides a perfect example of the need to interpret counts of jobs separately from counts of individuals. The earlier discussion about jobs noted that approximately 10,000 nonfarm wage and salary jobs had been added between 1987 and 1988. Yet only 3,400 persons gained employment in that labor category. More multiple job holding (moonlighting) and/or more nonresident job holders appears to have occurred in 1988.

The labor force should resume growth in 1989 and attain an annual average of around 818,300 persons. Total employment will advance .8 percent or about 6,500 persons over the 1988 level and be around 785,254 for the annual average. Thus, the employment growth for 1989 falls short of that in 1988, but still should be considered strong by historical standards. Farm employment is expected to decline in 1989 as a return to the longer-term trend begins. This leaves nonfarm wage and salary employment as the category to enjoy the strongest growth. The unemployment rate is projected to rise in 1989 to a 4.1 percent level, mainly because of the anticipated strong advance in the labor force figures. Sources of error for these employment projections center around the behavior of Nebraska's population and the labor force participation rate in 1989. The population projection being used for 1989 is 1.614 million and may be too bullish. Shortfalls in the actual population from the 1989 projection will result in lower employment gains unless the participation rate increases substantially to take up the slack. This is unlikely. Gradual increases in the participation rate, rather than abrupt jumps, are anticipated over the near term. On balance, 1989 looks like another good, but not spectacular, year for employment and jobs.

Income

Total personal income (TPI) is another broad measure of economic health and performance of the state economy. As outlined in Table 3, the positive components of TPI are wages and salaries; other labor income; proprietors' income; dividends, interest, and rent; and transfer payments. A deduction of contributions for social insurance is made, and finally a residence adjustment is made. Figures in Table 3 show that TPI averaged a 5.4 percent annual increase over the 1985-1988 period, with the 1987-1988 increase estimated at 6.8 percent. This most recent rise in TPI is further evidence that the Nebraska economy enjoyed a good year in 1988. Nonfarm income rose an estimated 6.9 percent in 1988 while farm income is expected to show a 5.0 percent gain in 1988 after the official figures arrive next spring.

Anticipating farm income is risky business; $2.223 billion in 1988 is probably at the high end of the range of possibilities. Official figures through the second quarter of 1988 show that farm income was on a pace that would be sufficient to generate the expected annual figure for 1988. Higher grain prices enjoyed during the year will be offset to some extent by declines in deficiency payment receipts and production declines in some grains due to the drought. At last report, however, 1988 corn production was only marginally below the 1987 level. Much of the final 1988 farm income story will depend upon inventory revaluations applied to 1987 grain that was under loan and marketed in 1988. Another factor is the December 1, 1988 beginning of the sign-up period for the 1989 farm program. Applications that were filed and processed by the end of December may have received some advance deficiency payments that will be counted as 1988 income. Although those payments will not match the levels of previous years, they will provide a small boost to the fourth quarter income figures.

Nebraska's TPI should barely top the $26 billion mark for 1989, providing a growth rate of 6.8 percent, identical to that estimated for 1988. The composition of growth will tilt in favor of the nonfarm category of income, with a rise of 7.0 percent versus a rise of 4.0 percent in farm income. The farm income growth rate projection has several downside risks. It assumes that the higher commodity prices seen since mid-1988 will moderate somewhat, but not fall drastically. Lower percentage set-asides on farm program acres for 1989 crops, however, will jeopardize prices. Target price reductions for 1989 are in place, so deficiency payments will be reduced correspondingly. Finally, starting the sign-up period for the 1989 farm program December 1 will transfer a small amount of income from 1989 to 1988.

The projection of $26 billion for TPI in 1989 reflects the expectation for continued strength in the Nebraska economy during the new year. With inflation expected in the 5.0 percent range, the 1989 income figure implies a gain of just less than 2.0 percent in real terms. The growth rate of TPI in Nebraska falls short of the anticipated growth rate of 2.5 percent in real terms for the TPI of the U.S.

Retail Sales

Nebraska's net taxable retail sales performance was one of the biggest success stories in the economy during 1988. Although superlatives are usually in short supply to describe economic activity, the growth of retail sales 1987-1988 was

Table 3
Income in Nebraska
(millions of current dollars)

	1985	1986	1987	1988*	1989	% Change 1988-1989	Average Annual % Change 1985-1988
Total Personal Income (TPI)	20,829	21,683	22,845	24,390	26,038	6.8%	5.4%
Nonfarm Personal Income	19,127	19,744	20,728	22,167	23,726	7.0	5.1
Farm Personal Income	1,702	1,939	2,117	2,223	2,312	4.0	9.4
Components of TPI							
Earnings	15,293	16,035	16,939	17,939	18,971	5.8	5.5
Wages and Salaries	11,148	11,484	12,056	12,775	13,531	5.9	4.7
Other Labor Income	990	1,003	1,050	11,129	1,211	7.2	4.5
Proprietors' Income	3,155	3,548	3,833	4,034	4,228	4.8	8.6
Less: Social Insurance Contribution	962	1,020	1,074	1,149	1,210	5.3	6.1
Plus: Residence Adjustment	-292	-278	-286	-289	-292	1.0	-0.3
Plus: Dividends, Interest, Rent	3,956	3,951	4,142	4,514	4,950	9.7	4.6
Plus: Transfer Payments	2,834	2,995	3,124	3,375	3,618	7.2	6.0

*Figures for 1988 are estimates made in advance of official releases.
Sources: Bureau of Economic Analysis: August 1988 release of state personal income. Projections from the Nebraska econometric model.

Table 4
Net Taxable Retail Sales in Nebraska
(billions of current dollars)

Category	1985	1986	1987	1988*	1989	% Change 1988-1989	Average Annual %e Change 1985-1988
Motor Vehicle Sales	1.067	1.246	1.191	1.411	1.482	5.0%	10.3%
Nonvehicle Sales	8.047	8.555	8.852	9.747	10.268	5.3	6.6
Total Sales	9.114	9.801	10.043	11.158	11.750	5.3	7.0

*Figures for 1988 are estimates made in advance of official releases.
Sources: Nebraska Department of Revenue. Projections from the Nebraska econometric model.

phenomenal, particularly in the motor vehicles category. Through September (the latest figures available), motor vehicles sales had reached $1,079 million, compared to a volume of $899 million during the corresponding January through September period of 1987. This is an increase of 20.0 percent. Nonmotor vehicle retail sales also posted substantial gains. Through September, nonmotor vehicle sales in 1988 had grown to $7.030 billion. In 1987, $6.379 billion in nonmotor vehicle sales were recorded over the January to September period. Thus, the pace of 1988 was 10.2 percent ahead of that of 1987. Overall growth rate in total sales was 11.4 percent between the respective January to September periods of 1987 and 1988.

Motor vehicle sales are expected to finish 1988 at $1.411 billion, resulting in an annual increase of 18.6 percent. The hectic pace of these sales is expected to slow in the final months of 1988. The pattern of nonmotor vehicle sales in the waning months of 1988 is expected to parallel that of the motor vehicle component, with a 1988 total of $9.747 billion. This figure represents a 10.1 percent gain over the 1987 level of nonmotor vehicle sales. Again, a slowdown of the high growth rate from the corresponding months of 1987 is expected to occur in the final quarter of 1988.

Before concluding that Nebraska's sales experiences of 1988 are setting the stage for continued high growth rates, a review of the rather lackluster sales performance of 1987 is in order. Growth rates always look high when the base year values are low, which is precisely the situation with motor vehicle sales and, to a lesser extent, nonmotor vehicle sales. Table 4 contains figures pertinent to this point. Motor vehicle sales in 1987 were $1.191 billion compared to $1.246 billion in 1986, a decline of 4.4 percent. The 1986 figure was inflated artificially by tax law changes affecting the timing of purchases, particularly those of motor vehicles. The 1988 sales advances look impressive because of what happened in 1986. Taking a slightly longer perspective and comparing the 1986 and 1988 figures shows an annual compounded growth rate of 6.5 percent. A similar story appears in nonmotor vehicle sales, although not to the same degree, because there was a positive gain in these sales between 1986 and 1987. Using 1986-1988 for the comparison period shows an annual compounded growth rate of 6.7 percent, a rate substantially less than the 10.1 percent growth rate between 1987 and 1988.

These comments on the recent behavior of retail sales provide the needed perspective in which to view the sales projections for 1989. As shown in Table 4, the annual growth rates of motor vehicle sales and nonmotor vehicle sales are expected to moderate during 1989, the rate of the former being 4.9 percent while that of the latter is 5.3 percent. Total sales will post a 5.2 percent annual growth rate in 1989. These growth rates look paltry when compared to the 1987-1988 rates, but they are not out of line with the growth rates over the past few years. The one exception where growth does look sluggish is in the motor vehicle category. Increases in interest rates on short- and medium-term debt as 1989 unfolds is a moderating factor on spending, particularly for the motor vehicle category. Also, the personal saving rate is expected to move upward slightly during 1989. Rates of consumption growth will moderate in response.

Summary

It is likely that the projections presented above will be considered optimistic by most observers of the Nebraska economy. Slower growth in 1989 is the dominant theme sounded by prognosticators of the national economy, but many expect the first quarter of the year (and possibly the second quarter) to be strong. The Nebraska economy should follow the same pattern. The second half of 1989 may find the growth rate of the nonfarm portion of the state economy slowing due to national influences. The projections show that economic performance measured over the full year will not fall that much from 1988. The optimism demonstrated by the projections could be dashed quickly if farm income falters. Nebraska has enjoyed a streak of successively higher farm incomes in recent years—this has transmitted benefits to the nonfarm portion of the economy. The transmission effect also will work in the negative direction if farm income declines.

1987 Ag Census Report Due Soon

How many grain farms operated in Nebraska during 1987, and how much did they produce? What is the number of farms in your county? How big are farms on average? The *1987 Census of Agriculture Advance Reports* offer answers to these questions and many more.

The Census Bureau currently is releasing the *1987 Census of Agriculture Advance Reports* for all states on a flow basis. The exact release time for the Nebraska report is unknown; however, it can be expected around March or April. Check future issues of Business in Nebraska for further information.

David D. DeFruiter

Review and Outlook of the National Economy

John S. Austin
Statistical Coordinator, UN-L Bureau of Business Research

Summary of National Projections

*First quarter real Gross National Product figures will boom. Once the nation rebounds from last year's drought, low growth rates will ensue.
*Real GNP will expand 2.5 to 3.0 percent.
*One to two percentage points likely will be added to inflation rates and interest rates.
*Auto sales and housing starts will decrease moderately.
*The Federal Reserve will be a major force in the 1989 economy. The Fed can affect continued expansion, especially if inflation accelerates.
*Supply shocks or bad policy could produce slower growth than projected.

The lead article of this issue focuses on Nebraska; this section will examine the national economy for 1988 and offer an outlook for the year ahead. Let's start with a review of 1988.

Review of 1988

The strength of the economy fooled almost everyone. When forecasts were made for 1988, slow growth was viewed as the optimistic forecast. It now is estimated that when the fourth quarter results are reported, 1988 real Gross National Product (GNP) will advance 3.9% over 1987.

The economy would have been stronger were it not for the drought. Using estimates from the Bureau of Economic Analysis (BEA), the drought will take approximately .75 percent off 1988's real GNP growth. Figures for the fourth quarter GNP are not yet available. The BEA recently indicated that $12.3 billion was their latest estimate of the drought effect for 1988. The BEA projects a drop in GNP of approximately 1.5 percent at seasonally adjusted rates. My estimate is that the fourth quarter growth in GNP will be about 2.0 percent. Future drought effect estimates may be reduced as GNP figures are revised.

Let's now turn to an analysis of the major sectors of the economy in 1988. Consumption expenditures have been relatively stable. After a weak fourth quarter 1987, real personal consumption expenditures advanced 4.5, 3.0, and 3.9 percent at annual rates for the first, second, and third quarters in 1988. Consumption of services has been fairly stable. Following a weak fourth quarter in 1987, durable goods boomed in the first quarter of this year, remained high in the second quarter, and declined slightly in the third quarter. Nondurable goods had the opposite pattern, showing an increase of 5.0 percent at annual rates in the third quarter.

Auto and light truck sales were well ahead of expectations in 1988. After a weak fourth quarter in 1987, auto sales hit their stride in the spring and summer. For the year as a whole, 10.5 million autos and a record 4.9 million light trucks were sold, totalling 15.5 million for the year. That was the third best year on record, well ahead of the 14.9 million units sold in 1987. GM and Chrysler recently made some adjustments for slow moving models. In particular, GM recently extended a vacation period for two of their plants, while Chrysler extended a vacation period for one plant and permanently closed the old American Motors plant in Wisconsin. The remainder of the domestic vehicle models seem to be moving well, with shortages for some products occurring in 1988.

Christmas 1988 sales were strong, but not spectacular. Sales were helped by two extra shopping days between Thanksgiving and Christmas. Christmas sales advanced slightly from a year ago after adjusting for inflation. This is a positive result in view of the dismal forecasts for Christmas sales that prevailed in October.

Construction showed a surprisingly good year. There were some surprising strengths in residential construction late in 1988. Housing starts should total just under 1.5 million units for the year. Public construction was strong, showing an increase of 4.0 percent at annual rates from October to November.

Capital goods did well in 1988. The average annual increase for the first three quarters of 1988 for real investment in durable equipment was 15.1 percent. That torrid growth rate cannot be maintained. Recent data indicate that orders are solid and that backlogs promise continued production and shipments into 1989. Some of these capital goods are for the export market. Other capital goods are used to relieve high domestic capacity utilization rates. These high capacity utilization rates imply that more investment is to come in 1989, especially in the metals and paper areas.

Government expenditures have been stable, but undoubtedly will come under fire in 1989 as a new Congress and a new president seek to establish priorities and position.

Industrial production in 1988 was a surprise. The index of industrial production for 1988 will show an increase of about 5.5 percent above 1987. There is some indication that the strength of industrial production was led by exports. Primary metals, alumi-

Table I
National Indicators

	Annual		Quarterly (SAAR)		
	1987	1988 estimated	1988I	1988II	1988III
Real GNP (% change)	3.4	3.9	3.4	3.0	2.5
Real Consumption (% change)	2.7	2.8	4.5	3.0	3.9
Housing Starts (millions)	1.6	1.5	1.5	1.5	1.5
Auto Sales (millions)	10.3	10.5	10.8	10.6	10.6
Interest Rate (90 day T-Bill)	5.8	6.6	5.8	6.2	7.0
Unemployment Rate (%)	6.2	5.5	5.7	5.4	5.5
Industrial Production Index (1977=100)	129.8	137.2	134.5	136.0	138.4
2 (% change)	6.5	5.1	6.8	7.7	3.7

num, copper, and paper are all near maximum output levels, as is production of selected car models. Consequently, I cannot be optimistic about further expansion in 1989 in the industrial area. Growth rates are likely to slow.

Inflation can best be described as creeping upward. For the year as a whole, consumer prices will advance a little over 4.0 percent, and producer prices will gain about 2.5 percent. Food products showed some ups and downs as a result of the drought. Food prices should stabilize. An exception is beef, where a surge in prices over the next year may occur. Metals prices have been reasonably stable despite high capacity utilization rates. The availability of foreign supplies has been a factor in these markets. The price of medical services continues to climb.

Monetary policy has been troubling in 1988. The growth of M2, the most commonly used measure of the money supply, was 10.0 percent in April, but dwindled thereafter to 1.0 to 2.0 percent. These changes in the money stock have profound effects on the economy. Typically, changes in monetary policy are a reaction to the Fed's analysis of what will happen to inflation. The Fed seems to have a target for real economic growth between 2.0 to 2.5 percent. Inflation, however, has been moderate, and the economy has been expanding 3.0 to 4.0 percent. This raises serious question about the Fed's policies.

In agriculture, there were large subsidy payments in 1988. Nebraska has benefited from these payments. Some of the payments were drought-related and were shifted from other programs.

Outlook for 1989

What is the outlook for 1989? It can be divided into three parts: what is known that will happen (to the extent that any event can be known to happen); what is reasonable speculation about the future; and what is pure guess work.

There are two items known to occur in 1989. First, the consumption of services will continue its slow and steady pace. Second, 1989 will start with a bang in GNP accounts. The rebound from the drought should add a healthy gain to first quarter figures. The first quarter growth rate for 1989 real GNP easily could fall in the 4.0 to 5.0 percent range, even as high as 6.0 percent. Given that start, the yearly average could be respectable under even the most modest assumption of growth in real GNP for the balance of 1989.

What likely will occur in 1989? Inflation will continue its moderate creep. The experience of the 1970s reminds us that momentum can play a role in inflation. The Federal Reserve could move to offset that momentum by restrictive monetary policy as it did in 1981 and 1982. With inflation in the 4.0 to 5.0 percent range at the end of 1988 (depending on what measure is used), it is hard to find a reason for the Fed to tighten monetary policy at this time.

Another source of price disruption is OPEC. OPEC members agreed to a new overall quota of 18.5 million barrels per day. Evidence from the first few days of January is that OPEC members are complying. With a large build-up of oil stocks prior to the January 1 agreement date, however, there is currently little upward pressure on crude prices. Given the difficulties OPEC has had in policing its membership, there is small likelihood that the agreement will hold. Therefore, an oil-based cost push scenario is unlikely.

Nonresidential capital expenditures are likely to expand in 1989. These capital expenditures are slow to reverse, typically not reversing until after a recession has started. According to a recent Department of Commerce survey, plans for new plant and equipment in 1989 call for an increase of 6.0 percent in spending. With near capacity utilization, it is likely that investment will occur. The big spenders will be paper and nonferrous metals industries who now are planning increases of 28.3 and 13.1 percent. Automakers will expand 7.8 percent.

Housing activity will turn down in 1989, with starts totalling about 1.4 million units. The outlook for housing depends on interest rates. The demographics for housing purchases are weakening somewhat because baby boomers have been in the prime home purchasing age bracket for several years. Nevertheless, with divorce rates continuing at fairly high levels, more and smaller households will be formed, not fewer households.

Purchases of automobiles and light trucks probably will decline. After two good years of auto purchases, an expansion in this area is unlikely

With industrial production reaching new peaks and with some industries at capacity, there is little room for large increases in industrial production. The capital expenditures needed to create new capacity are not happening rapidly enough in 1988 to allow much expansion in 1989. For the year as a whole, industrial production should expand 3.0 to 4.0 percent.

I see no radical changes in government spending or tax policy at this time. Many feel that tax increases are needed, but are willing to wait. I expect nothing to be done on the income tax nor on Social Security taxes in 1989. There is probably as much desire to increase government spending on the part of Congress as there is a desire to cut government spending on the part of the in-coming president. Gramm-Rudman targets likely will be met through a mixture of real change and trickery, such as the bookkeeping transfer of the Social Security surplus. The question remains whether we have the national maturity to pay for what we spend. The answer on the federal government level is no. Special interests will continue to win concessions. Deficits will remain a problem. I suspect that Gramm-Rudman targets will be rescheduled and made easier to meet.

Agriculture policies are likely to change over the long term. Nevertheless, the rate of adjustment will be small. With budget-cutting considerations, agricultural subsidies are a likely target. Any changes probably will come gradually. The response on the part of the administration and Congress to the drought in 1988 suggests that government will not abandon the farmer.

Under the heading of pure guesswork comes speculation of how the Federal Reserve will behave. The Federal Reserve may overreact to its perception of inflation and choke expansion. There is little information for evaluating the current Federal Reserve at this point. Under the Greenspan Fed, M2 acted like a roller coaster ... after the 1987 market crash, the Fed rapidly expanded the money supply, following that with a rapid reduction of growth. Reasonably stable monetary policy has not been set by the Fed for some time. Interest rates are likely to increase moderately in 1989, perhaps one to two percentage points by the end of the year.

The other area of pure guesswork is the trade deficit. I suspect that the trade deficit will continue to improve, but have no basis for this projection. Determining the future course of the trade deficit is difficult because of the nature of data sources. For example, stock market reactions to monthly changes in the trade deficit are based on trade data that have fundemental collection problems. My outlook for the trade deficit is a momentum forecast, with high probability of error. Growing problems in Europe over beef imports may dampen U.S. trade prospects.

Another area that is pure guesswork is farm income. In November, a panel speculated that farm income in 1989 would decrease 10.0 percent from 1988. This drop will result from a reduction of farm subsidies and an expansion of production costs. Projecting farm income requires a forecast of weather conditions, prices, production, and exports, which makes such projections extremely difficult and prone to error. The Russians indicate that they will increase their grain purchases in 1989. The combined effect of the American drought and Russian purchases in 1989 implies a reduction in huge U.S. commodity stocks. This reduction may be a remedy for low agricultural prices in the short term, but a large production response is not unlikely.

Thus, the long-term hopes for limiting agricultural stocks are low, and the probable outlook for agricultural prices is another drop. A free market solution to the agricultural problem would be to drive out inefficient producers, leaving only the large efficient producers. Over the long-term, this has been happening in the U.S. agricultural community.

Conclusions

What reasonable projections can be made from the discussion above? Let's start with a projection of monetary policy. I

Table II
Employment in Nebraska

	Revised Oct. 1988	Preliminary Nov. 1988	Nov. % Change vs. Year Ago
Place of Work			
Nonfarm	676,144	681,010	1.6
Manufacturing	94,099	93,803	3.5
Durables	46,310	46,137	4.8
Nondurables	47,789	47,666	2.3
Mining	1,639	1,622	-3.6
Construction	25,246	24,808	0.7
TCU*	44,810	45,655	4.0
Trade	172,438	173,717	0.6
Wholesale	48,253	48,157	1.7
Retail	124,185	125,560	0.2
FIRE**	48,293	48,837	2.0
Services	149,611	149,799	-0.3
Government	140,008	143,219	3.0
Place of Residence			
Civilian Labor Force	828,008	827,960	-0.1
Unemployment Rate	3.2%	3.6%	

*Transportation, Communication, and Utilities
**Finance, Insurance, and Real Estate

Source: Nebraska Department of Labor

Table III
Price Indices

	Nov. 1988	% Change vs. Year Ago	YTD % Change vs. Year Ago
Consumer Price Index - U* (1982-84 = 100)			
All Items	120.3	4.2	4.0
Commodities	113.5	3.6	3.5
Services	127.8	4.8	4.5
Producer Price Index (1982 = 100)			
Finished Goods	109.7	3.3	2.3
Intermediate Materials	109	5.3	5.4
Crude Materials	94	-0.6	2.4
Ag Prices Received (1977 = 100)			
Nebraska	150	16.3	11.8
Crops	131	45.6	37.1
Livestock	162	5.2	3.0
United States	142	7.6	8.3
Crops	133	10.8	17.5
Livestock	151	5.6	1.9

U* = All urban consumers
Source: U.S. Bureau of Labor Statistics

hope that the Federal Reserve will moderate expansion of the money supply and not create large changes in the money supply throughout 1989. Interest rates are likely to increase about one to two percentage points, which would parallel the expected increase in inflation.

Consumption should increase in 1989, with the consumption of services up and the consumption of nondurables up slightly. The consumption of durables will be stable or slow slightly in 1989.

In the investment area, residential construction likely will decline. Nonresidential construction will show a slight increase, with plant expansions increasing and commercial construction decreasing. Public construction expenditures will retrench somewhat from 1988 levels. Capital goods will have a good year, with some capacity problems restricting growth.

I expect a slight reduction in government expenditures. Industrial production should increase a small amount in 1989. Most of that increase will be a small addition to the high levels of output reached at the end of 1988.

To summarize the outlook, I agree with most forecasters. Overall real GNP levels will increase about 2.5 to 3.0 percent in 1989. The expected boom in first quarter GNP numbers makes it hard to see GNP declining for 1989 as a whole. That does not preclude some negative quarters or a tapering of growth throughout the year. High capacity utilization rates, however, imply that it will be hard to achieve substantial gains in GNP growth in 1989. It is conceivable that we will experience the pattern of the late 1970s and early 1980s where occasional single quarter declines were followed by several quarters of growth. If that happens, monetary and fiscal policies become critical. Overreactions to single quarter downturns can be destabilizing. For the most part, I remain optimistic. The conditions for a recession are not in place at this time. 1989 is likely to be a year of continued moderate growth. The pessimists will have to wait until 1990 or later for their long anticipated downturn.

Table IV
City Business Indicators
September 1988 Percent Change from Year Ago

The State and Its Trading Centers	Employment (1)	Building Activity (2)
NEBRASKA	3.9	12.9
Alliance	-0.8	149.6
Beatrice	-0.2	135.7
Bellevue	3.3	100.0
Blair	3.3	-53.1
Broken Bow	-1.5	27.2
Chadron	4.0	-83.6
Columbus	7.2	28.9
Fairbury	-1.6	1,785.3
Falls City	-1.8	173.4
Fremont	-0.2	13.0
Grand Island	0.0	-0.9
Hastings	-1.9	13.3
Holdrege	-1.2	71.1
Kearney	-0.1	109.6
Lexington	-1.8	26.0
Lincoln	1.6	-8.3
McCook	-1.9	49.9
Nebraska City	-1.1	-11.6
Norfolk	-0.4	-33.5
North Platte	-0.7	74.7
Omaha	3.3	13.2
Scottsbluff/Gering	-0.8	29.3
Seward	-2.0	-14.6
Sidney	-1.5	32.5
South Sioux City	5.3	295.3
York	-1.4	-65.2

(1)As a proxy for city employment, total employment (labor force basis) for the county in which a city is located is used.

(2)Building activity is the value of building permits issued as a spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Cost Index is used to adjust construction activity for price changes.

Sources: Nebraska Department of Labor and reports from private and public agencies.

Figure I
City Business Index
September 1988 Percent Change from Year Ago

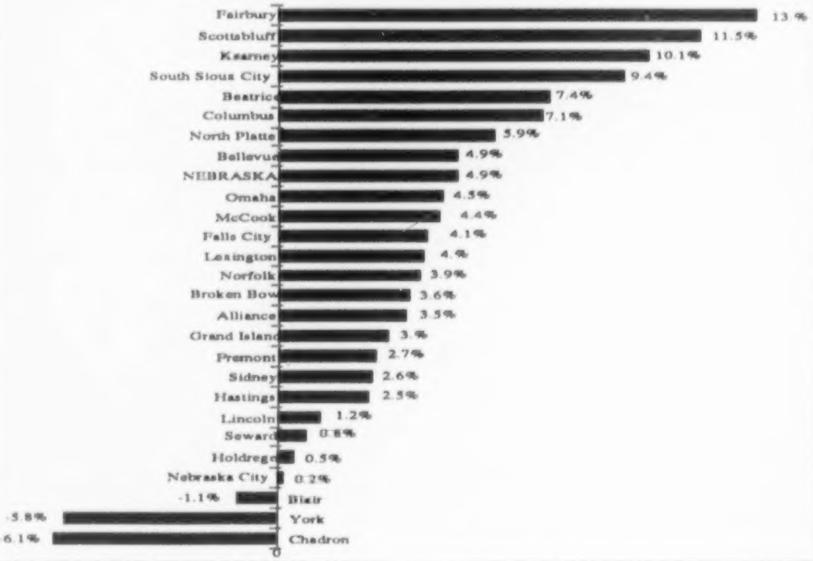
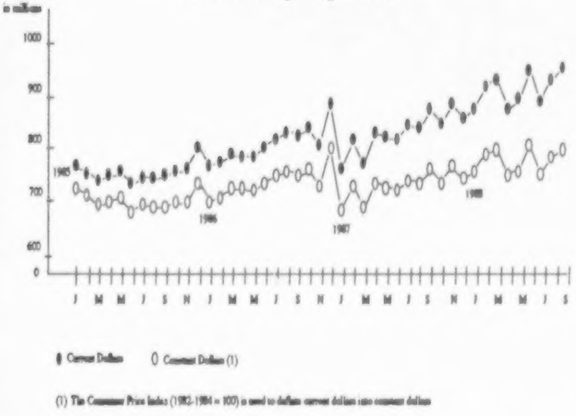


Table V
Net Taxable Retail Sales of Nebraska Regions and Cities

Region Number and City (1)	City Sales (2) Sept. 1988 (000s)	City Sales (2) % Change vs. Year Ago	Region Sales (2) Sept. 1988 (000s)	Region Sales (2) % Change vs. Year Ago	YTD % Change vs. Year Ago
NEBRASKA	$870,994	9.8	$993,332	9.4	11.4
1 Omaha	290,153	9.3	361,906	7.9	8.8
Bellevue	13,340	3.9	*	*	*
Blair	4,481	6.3	*	*	*
2 Lincoln	116,129	5.8	134,182	7.8	12.3
3 South Sioux City	4,352	4.7	6,394	2.1	18.3
4 Nebraska City	3,902	5.9	18,831	7.1	8.2
6 Fremont	15,776	8.9	29,392	6.1	12.1
West Point	2,737	4.9	*	*	*
7 Falls City	2,357	3.8	9,468	4.9	5.3
8 Seward	4,198	9.5	15,030	5.6	11.3
York	6,809	3.5	16,088	12.9	12.3
10 Columbus	14,284	10.1	26,750	11.0	14.3
11 Norfolk	19,097	17.9	34,703	14.3	17.0
Wayne	2,868	0.2	*	*	*
12 Grand Island	33,018	10.8	47,914	12.2	15.3
13 Hastings	14,622	10.1	23,965	6.4	10.0
14 Beatrice	7,639	11.6	17,167	4.5	8.7
Fairbury	2,608	2.8	*	*	*
15 Kearney	18,168	19.3	26,531	18.6	18.9
16 Lexington	5,749	12.3	15,905	10.1	18.5
17 Holdrege	4,274	0.2	7,935	-1.2	9.8
18 North Platte	15,080	12.1	19,306	11.5	15.5
19 Ogallala	5,582	8.6	11,171	13.5	13.2
20 McCook	7,588	11.3	11,269	9.6	15.6
21 Sidney	3,626	8.1	7,927	4.9	7.9
Kimball	1,697	-12.6	*	*	*
22 Scottsbluff/Gering	16,928	28.4	24,363	8.0	6.9
23 Alliance	4,913	2.6	13,614	7.4	11.0
Chadron	2,831	5.7	*	*	*
24 O'Neill	3,802	11.4	13,496	9.0	14.9
Valentine	2,359	4.1	*	*	*
25 Hartington	1,453	3.2	8,671	1.6	8.2
26 Broken Bow	3,201	11.0	12,024	16.2	19.8

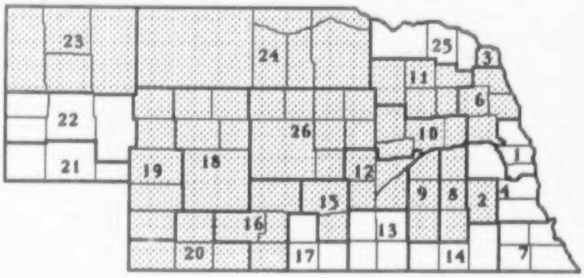
(1) See region map.
(2) Sales on which sales taxes are collected by retailers located in the state. Region totals include motor vehicle sales.
* Within an already designated region.
Compiled from data provided by the Nebraska Department of Revenue

Figure II
Nebraska Net Taxable Retail Sales
(Seasonally Adjusted)



(1) The Consumer Price Index (1982-84 = 100) is used to deflate current dollars into constant dollars

Figure III
Region Sales Pattern
YTD as Percent Change from Year Ago



Shaded areas are those with sales gains above the state average.

Scoreboard

Percent change from same month one year ago

	State	Metro+	Nonmetro
Motor Vehicle Sales (Sept.) Constant $	↑ 2.7%	↑ 2.0%	↑ 3.3%
Nonmotor Vehicle Sales (Sept.) Constant $	↑ 5.4%	↑ 3.8%	↑ 7.1%
Building Activity (Sept.) Constant $	↑ 9.2%	↑ 4.9%	↑ 15.9%
Employment (Nov.)	↑ 2.1%	↑ 4.4%	↓ -0.1%
Unemployment Rate* (Nov.)	↓ 3.6%	↓ 3.6%	↓ 3.7%

+Omaha and Lincoln
*Unemployment is this month's rate, not a percent change from year ago

Business in Nebraska

PREPARED BY BUREAU OF BUSINESS RESEARCH
Association for University Business & Economic Research

Business in Nebraska is issued as a public service and mailed free of charge upon request to 200 CBA, University of Nebraska-Lincoln, Lincoln, NE 68588-0406. Copyright 1989 by Bureau of Business Research, University of Nebraska-Lincoln.

January 1989, Volume 44 No. 532

University of Nebraska-Lincoln-- Martin Massengale, *Chancellor*
College of Business Administration--Gary Schwendiman, *Dean*

Bureau of Business Research
F. Charles Lamphear, *Interim Director*
James R. Schmidt, *Acting Associate Director*
Merlin W. Erickson, *Research Associate*
Margo Young, *Editorial Assistant*
John S. Austin, *Statistical Coordinator*
David D. DeFruiter, *Statistical Technician*

The University of Nebraska-Lincoln does not discriminate in its academic, admission, or employment programs and abides by all federal regulations pertaining to same.

Non-Profit Org.
U. S. Postage
PAID
Lincoln, Nebraska
Permit No. 46

CONGRESSIONAL INFO SERVIC270238
* SRI BR
* 4520 EAST-WEST HWY
* BETHESDA, MD 20814

U7860-1
3/14/89

Business
In
Nebraska

February 1989
Vol. 44 No. 533

Prepared by the Bureau of Business Research
200 College of Business Administration
University of Nebraska-Lincoln
Lincoln, NE 68588-0406
402/472-2334

A Model of New Nebraska Industry

F. Charles Lamphear
Interim Director Bureau of Business Research and Professor of Economics

Introduction

A look into Nebraska's economic future was undertaken recently at a conference sponsored by the Bureau of Business Research and the College of Business Administration of the University of Nebraska-Lincoln. Generally, the state's economic future was viewed as favorable, at least for the remainder of this century.

Several of the speakers, however, raised one concern. The concern is the long-term economic effect of outmigration, especially the outmigration of the state's young population.

Chancellor Massengale noted in his luncheon address that Nebraska must provide its youth with sufficient job opportunities, including quality higher education. Massengale warned that if sufficient job opportunities are not created, the young population will leave the state.

The concern over outmigration can be summarized this way. If the state fails to generate sufficient quality jobs to retain its young population during the remainder of this century, it will run the risk of creating a severe labor shortage that could restrict its economic growth to critically low levels. This could encourage further outmigration, creating a cumulative causation effect.

The concern to retain our young population comes at a time when fewer young persons are entering the workforce nationwide. As the last baby boomers turn 25 this year, the 18 to 24 group that constitutes the main pool of new workers will start to shrink dramatically. By 1995, it will amount to only 22.7 million persons—a decline of 7 million from 1987.

A smaller workforce pool will contain a leaner mix of qualified workers. This means that premium salaries likely will be paid by the industrialized and urbanized areas of the country in order to attract sufficient high quality labor.

To counter attractive job opportunities elsewhere, states such as Nebraska will need to be prepared to offer equally attractive jobs. Nebraska recently took a significant and important step to strengthen its employment base with the passage of LB775. Governor Orr indicated in her state-of-the-state message at the beginning of the year that the state is entering a major expansionary period of new capital construction and of increased employment. Over $2 billion in new capital construction has been committed, with an expected 18,000 new jobs added to the employment base.

LB775 is only a beginning. More is needed. Additional economic strategies will be needed to develop a sustainable economic base for Nebraska that can generate sufficient jobs into the next century.

Many different strategies for economic growth and change need to be examined. One strategy, and the focus of this article, involves the formation of alliances or partnerships between Nebraska businesses and national and international companies faced with market fragmentation. A national trend in the formation of business alliances or partnerships seems inevitable because of the recent growth in market fragmentation.

Market Fragmentation

Market fragmentation is the dissolution of large homogeneous markets into small diversified markets.

Market fragmentation is the creation of many recent factors operating in the marketplace, including growth in market globalization, in ethnic fashions, in communications, and in nonstore retailing. One point is clear. Gone is the single homogeneous market.

Examples of market fragmentation include the following cases.

Auto buyers can choose from 300 different types of cars and light trucks, domestic and imported, and variations within each of these lines.

Beer drinkers now have 400 brands to sample.

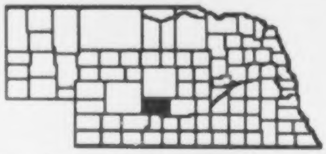
The number of products in supermarkets has soared from 13,000 in 1981 to 21,000 in 1987, with convenience foods and deli and health food offerings leading the way. This means that, on average, three new products were added each day to the stock of products on supermarket shelves.

The VCR has been on the market approximately 12 years. Today, there are about 500 different makes and models of VCRs offered in the marketplace. This averages to nearly 40 new models per year or almost four per month.

Television viewers are tuning out the big three broadcasters to watch cable and independent narrowcast stations. In 1987, the

County of the Month

Dawson



Size of county: 1,013 square miles, ranks 16th in the state

Population: 20,600 (estimated) in 1987, a change of -7.5 percent from 1980

Median age: 30.6 years in Dawson County, 29.7 years in Nebraska in 1980

Per capita personal income: $11,823 in 1986, ranks 73rd in the state

Unemployment rate: 7.1 percent in Dawson County, 4.9 percent in Nebraska for 1987

Net taxable retail sales ($000): $115,972 in 1987, a change of 4.9 percent from 1986; $111,775 during January-October 1988, a change of 18.9 percent from the same period one year ago

Nonfarm employment (1987):

	State	Dawson County
Wage & salary workers	659,223	6,812
	(percent of total)	
Manufacturing	13.3%	22.2%
Construction and Mining	3.9	4.3
TCU	6.5	3.5
Retail Trade	18.7	20.2
Wholesale Trade	7.1	9.7
FIRE	7.3	4.7
Services	22.7	13.1
Government	20.5	22.3
Total	100.0%	100.0%

Agriculture:

Number of farms: 959 in 1982, 1,049 in 1978
Average farm size: 706 acres in 1982
Market value of farm products sold: $223.4 million in 1982 ($232,956 average per farm)

Sources:
Bureau of the Census: *Area Measurement Reports*, 1970; *Census of Agriculture*, 1982; *Census of Population*, 1980; *County Population Estimates*, July 1, 1987
Bureau of Economic Analysis: *Survey of Current Business*, April 1988
Nebraska Department of Labor: *Labor Market Summary Report*, 1987
Nebraska Department of Revenue: *Net Taxable Sales*

Merlin W. Erickson

New Nebraska Industry (continued)

three networks lost 9 percent of their viewers—more than six million viewers.

Market fragmentation is bringing major changes in production. These changes are evident in a product's life cycle and in the orientation of production. These changes may be favorable to Nebraska's economy, especially because of the state's strong workforce.

Product Life Cycle

Products are like living organisms. They are born, they live, and they die. A new product is introduced into the marketplace; it grows; and, when it loses appeal, it is terminated.

A product's life cycle can be viewed as having three basic stages: 1. conception; 2. development; and 3. standardization. Any product or service begins with an idea. Ideas that seem worthwhile undergo research and development, which is stage one of the three-stage life cycle of a product. The amount of research and development involved varies directly with the nature of the idea, but a major portion of the total effort (outlay) allocated to a product's total life cycle generally is in research and development.

After the conception (or research and development) stage comes the product development stage. This stage involves test marketing of the product to determine consumer acceptability. If the product is accepted by consumers in sufficient quantity, then the product moves to the product standardization stage, where economies of scale in production can be realized. Economies of scale mean that large quantities of the product can be produced at relatively low average costs.

Historically in the United States, the product life cycle has played an important role in the relationship between urban and rural regions. Urban regions traditionally have served as the incubators for new ideas and also as the centers for research and development and test marketing. Rural regions, on the other hand, historically have been the recipients of product standardization. Product standardization (i.e., stage three) requires a lower skilled workforce compared with the skill requirements of stages one and two. Therefore, urban regions historically have spun off products to rural regions for mass production, with the urban regions receiving the lion's share of profits during the life of the product.

The length of a product's life cycle generally is determined by the consumer. Today's consumers, with their varied and temporal wants, are reducing the length of a product's life cycle. Most of the reduction is occurring in stage three, because production is shifting from standardization to customization.

Growth in customized production likely will lead to a downsizing of plants. Adaptability and flexibility likely will become more important as producers attempt to keep pace with the dynamics of market fragmentation and market diversification. Economies of adaptability and flexibility should favor smaller plants because of their narrow focus.

Production Orientation

The dynamics of market fragmentation and market diversification have shifted the orientation of production from product to process.

Product orientation means that job training and production are focused on the final product. Process orientation, on the other hand, means that job training and production are focused on a functional product.

Clearly, the difference between a product-oriented plant and a process-oriented plant is not distinguishable in the final product, because the final product can be the same in both cases. The distinction occurs in the training or the education of the workforce. A workforce that is process-oriented thinks in terms of concepts and processes that are required to transform a functional product (e.g., a fastener) into a final product (e.g., a bolt). A process-oriented workforce readily can adjust to new production requirements. A product-oriented workforce thinks only in terms of the final product. Therefore, a product-oriented workforce cannot adjust easily to new product requirements.

Finally, process orientation means a movement away from economies-of-scale production to economies-of-knowledge production. Process orientation emphasizes the functional product rather than the final product in order to facilitate rapid changes in the production of new input requirements or new final products. Therefore, for process-oriented production, emphasis is economies of adaptability (or economies-of-knowledge production) rather than economies of scale. A strong workforce is a prerequisite to a process-oriented plant.

Nebraska's Favorable Workforce Base

Nebraska's workforce is a strong workforce resource. Statistics consistently show that the state's high school students place well above the national average in scholastic achievement scores. Moreover, the percent of students who complete high school in Nebraska is substantially above the national average. In 1987, Nebraska placed seventh in the rankings of scholastic achievement scores among the 28 states that administered the American College Testing program (ACT) to college-bound high school students. In addition, Nebraska ranked fourth in 1986 in the percent of high school graduates. Table 1 compares Nebraska with the nation and with other midwestern states for 1986 and 1987.

A Growth Strategy for Nebraska

The dynamics of market fragmentation and market diversification are creating tough problems for old-line companies that are more accustomed to mass markets and fixed or standardized production methods.

One example is IBM. After its rise in the personal computer market through 1984, IBM found its stronghold eroding. IBM's problem was not due to some giant competitor that was encroaching on its market. Instead, IBM's market was being nibbled away by more than 300 clone producers.

IBM's solution was to form alliances or partnerships with smaller companies. IBM established ties to some 1,500 small computer service companies nationwide.

Large companies such as IBM are recognizing that they can compete in the newly diversifying and fragmenting markets by forming alliances or partnerships with small companies that are innovative and process-oriented and who have access to resourceful workforces.

Table 1
ACT College Entrance Scores
and High School Graduation Rates
(with state rank in parentheses)

State	Average ACT Score of High School Graduates 1987		High School Graduation Rate Adjusted for Migration & Unclassified Students 1986	
Colorado	19.9	(4T) *	73.1	(28)
Iowa	20.3	(2)	87.5	(5)
Kansas	19.3	(9T)	81.5	(8T)
Minnesota	20.2	(3)	91.4	(1)
Missouri	19.2	(12)	75.6	(22)
Nebraska	19.8	(7)	88.1	(4)
South Dakota	19.6	(8)	81.5	(8T)
U.S. Average	18.7		71.5	

*--T denotes tie in rank.
Source: U.S. Department of Education, Office of Planning, Budget and Evaluation, February, 1988.

Nebraska's favorable workforce base provides the state with an opportunity to develop alliances between Nebraska businesses and national and international companies. Agribusiness partnerships would make sense because Nebraska is a leader in agribusiness and agribusiness research and because of the rapid growth in deli and health food lines nationwide.

To create an atmosphere for the formation of business partnerships, a coordinated plan needs to be developed that would weave many government and educational activities into a special service infrastructure for Nebraska businesses.

Although it is not the intent of this article to develop a plan of coordination, an attempt will be made to list a number of activities that might be considered in such a plan. These activities are grouped into three areas: secondary education, post-secondary education, and state government. These activities already exist in some form in Nebraska. They can be interrelated in a manner that would stimulate the formation of business partnerships.

Secondary Education

Special programs for credit should be offered in our high schools:

- That teach the importance of entrepreneurship;
- That teach the important difference between process orientation and product orientation;
- That teach the important role of venture capital and how venture capital can be obtained;
- That teach the importance of being a calculated risk taker;
- That involve students in conducting community base studies (e.g., assessing the economic resources of the community);
- That encourage students to be creative in new product or service concepts or in the modifications of existing products and services.

State Government

State government needs to be:

- Instrumental in the identification of potential partnership companies that serve national and international markets. The identification process should focus on national and international companies that rely on independent suppliers for their inputs;
- Instrumental in arranging partnerships between the national or the international company and the smaller local company;
- Instrumental in the coordination of community and regional development efforts with community or region-based businesses that are in the process of forming partnerships with national and international companies;
- Instrumental in identifying and creating sources of venture capital;
- Instrumental in supporting national and international company research and development by state-based research in order to jointly develop a process that eventually would benefit the company, with the condition that the process or product would be supplied under subcontract by a Nebraska

business. Such state-based support could be critical in establishing long-term working relationships between Nebraska businesses and national and international companies.

Colleges and Universities

The state's colleges and universities must direct resources for:

- The development of a research capability to conduct special state-supported research that may be necessary for the establishment of long-term partnership arrangements between Nebraska businesses and national and international companies;
- The development of employee-based educational programs that focus on education rather than on training and that encourage workers to be process-oriented rather than product-oriented;
- The development of entrepreneurship programs for high schools;
- The development of special college level courses that provide students the opportunity to develop and evaluate new product and process technologies;
- The recruitment of alumni to assist in the formation of partnerships between Nebraska businesses and national and international companies.

Conclusion

Large national and international companies are realizing a new resource potential—an ongoing relationship with small innovative enterprises. Nebraska can play a significant role in this movement, especially because of its favorable workforce. The formation of small business partnerships with national and international companies may create enough new job opportunities in Nebraska to significantly reduce the state's outmigration of young adults.

Governmental and educational institutions may be able to create a climate for economic growth. But these institutions cannot create jobs—that's up to the private sector.

Female Graduates Outnumber Male Graduates

The number of women receiving degrees in higher education has changed strikingly since the 1970-1971 academic year, when men earned three bachelor's degrees for every two earned by women. Women have earned more bachelor's degrees than men in every year since 1981-1982.

In 1985-1986, women were awarded more master's degrees than men. Women received 145,059 master's degrees, while men received 143,508 master's degrees.

Although men still earned more first professional degrees in 1985-1986, women have increased their share of law, business, management, protective services, computer and information sciences, and agriculture and natural resources degrees received by 20.0 percent during the past ten years. First professional degrees require at least six years of study. Law degrees account for 48.5 percent of all first professional degrees.

Furthermore, the number of women joining the labor force increased during the last decade. The number of men participating in the labor force has decreased over the last ten years.

Chris Tarsney

Review and Outlook

Fourth quarter 1988 real Gross National Product (GNP) figures were released at the end of January. Real GNP advanced 2.0 percent at annual rates in that quarter or 3.8 percent for the year. If the BEA's estimate of the drought impact is removed, the quarter would have expanded about 3.5 percent. That is a healthy rate of gain, especially at this point in the long continued expansion that began in 1983.

I have seen estimates that real GNP will advance anywhere from 4.0 to 6.0 percent at annual rates in the first quarter of 1989. The magnitude of the increase will be related to the drought. In this case, a nondrought quarter (1989:I) will be compared to a drought quarter (1988:IV).

Until now, inflation has not been an issue. For the year 1988, the Consumer Price Index advanced 4.4 percent, a rate of increase equal to that experienced in 1987. This rate of gain was moderate in my estimation. My position disagrees with that of Alan Greenspan of the Federal Reserve Board. Greenspan thinks that inflation is too high. Further, he wants to see real GNP growth in the 2.0 to 2.5 percent range. My problem with Greenspan's view is that the economy was able to expand 3.8 percent in 1988 with no change in the rate of inflation. I would be delighted to see this performance repeated. I am sure, however, that the Federal Reserve will not let this scenario repeat. Instead, the Fed will tighten monetary expansion. If there is a recession in 1990, it may be another recession attributable to actions of the Federal Reserve Board.

Let's look at recent economic news. One cloud on the horizon is that paper and paper board production fell in December. The drop was minor, but it is a continuation of a trend that began in the fourth quarter. Paper and paper board production often is viewed as a leading indicator of economic activity because paper and paper board go into a broad mix of uses that characterize the economic climate.

Retail sales in January were reported to be up 6.0 to 10.0 percent by some major retailers. The inventory to sales ratio, a measure of the ability of retailers to control inventory, has been decreasing steadily over the last three years. It is now in the vicinity of 1.5, a ratio that is viewed as healthy by many observers.

Sales of new single family homes in December advanced 0.6 percent over November or 0.9 percent for the year. This is surprising—most economists, including me, expected the housing industry to be damaged by increases in interest rates in 1988.

The unemployment rate for January 1989 was released recently. It was 5.4 percent, an increase of 0.1 percent over December 1988. The increase was related to an extraordinarily large increase in the labor force attributable to warm January weather. In any event, unemployment remains at low levels.

In December personal income advanced 0.9 percent. Durable goods orders rose 6.4 percent in December or 10.8 percent for the year.

There is increasing pressure on labor costs. Total wages, salary, and benefits in the private sector were reported to have increased 4.9 percent in 1988 by the Bureau of Labor Statistics. The rate of gain was 3.3 percent for 1987 and 3.2 percent for 1986.

There has been a steady progression of the rate of gain of these labor costs. Labor costs are not adjusted for increases in productivity. Further, union wages have not expanded as fast as these numbers indicate. Union wage increases in 1988 totaled 2.2 percent.

The industrial production index advanced 3.1 percent in December 1988. That was an gain of 4.7 percent from the year before. That rate of increase was startling for an economy in the seventh year of expansion. The December jump was based mostly on increased automobile production. The second half 1988 increases in the industrial production index were due mostly to consumer goods. In contrast, the early 1988 increases in the industrial production index were driven by the export market.

In December the capacity utilization rate was 84.4 percent, only 2.5 percentage points from the peak reached in November 1979. That peak in capacity utilization rates was associated with extremely high inflation and interest rates. The implication is

Table I
Income and Earnings in Nebraska*
(millions of dollars)

	First Quarter 1987	Second Quarter 1987	Third Quarter 1987	Fourth Quarter 1987	First Quarter 1988	Second Quarter 1988	Third Quarter 1988	% Change 1988:III vs Year Ago
Income								
Total Personal Income	22,622	22,206	21,944	24,610	23,452	24,218	23,198	5.7%
Nonfarm	20,327	20,494	20,830	21,262	21,542	21,760	22,067	5.9%
Farm	2,295	1,711	1,113	3,348	1,910	2,458	1,130	1.5%
Earnings by Industry**								
Ag. Services, Forestry, & Fisheries	73	72	75	82	86	84	84	12.0%
Mining	40	46	50	51	46	49	48	-4.0%
Construction	928	864	851	885	969	931	914	7.4%
Manufacturing	2,121	2,134	2,206	2,255	2,342	2,312	2,367	7.3%
Nondurable	1,041	1,067	1,093	1,121	1,143	1,151	1,183	8.2%
Durable	1,080	1,068	1,113	1,133	1,199	1,162	1,184	6.4%
Transportation & Public Utilities	1,571	1,574	1,612	1,629	1,661	1,693	1,714	6.3%
Wholesale Trade	1,105	1,116	1,142	1,160	1,199	1,230	1,242	8.8%
Retail Trade	1,528	1,543	1,556	1,574	1,613	1,633	1,655	6.4%
Finance, Insurance, & Real Estate	1,161	1,149	1,177	1,197	1,192	1,216	1,240	5.4%
Services	3,154	3,207	3,279	3,387	3,355	3,530	3,597	9.7%
Government	2,886	2,917	2,936	2,999	3,032	2,973	3,011	2.6%
Federal, Civilian	453	451	462	467	470	466	467	1.1%
Military	396	397	400	400	407	405	405	1.3%
State & Local	2,037	2,069	2,075	2,132	2,156	2,102	2,139	3.1%

* All data are seasonally adjusted at annual rates.
** Earnings is the sum of wages and salaries, other labor income, and income earned by sole proprietors.

Table II
Employment in Nebraska

	Revised Nov. 1988	Preliminary Dec. 1988	Dec. % Change vs. Year Ago
Place of Work			
Nonfarm	681,727	680,030	1.5
Manufacturing	93,902	93,937	3.6
Durables	46,314	46,204	4.7
Nondurables	47,588	47,733	2.6
Mining	1,623	1,589	0.4
Construction	24,909	23,322	2.9
TCU*	45,526	45,536	4.0
Trade	174,454	176,206	1.6
Wholesale	48,417	48,770	2.6
Retail	126,037	127,436	1.2
FIRE**	48,369	48,518	1.9
Services	149,782	150,112	-0.4
Government	143,162	140,810	0.9
Place of Residence			
Civilian Labor Force	828,664	819,352	0.4
Unemployment Rate	3.6%	4.0%	

*Transportation, Communication, and Utilities
**Finance, Insurance, and Real Estate

Source: Nebraska Department of Labor

Table III
Price Indices

	Dec. 1988	% Change vs. Year Ago	YTD % Change vs. Year Ago
Consumer Price Index - U* (1982-84 = 100)			
All Items	120.5	4.4	4.1
Commodities	113.5	3.8	3.5
Services	128.1	4.8	4.6
Producer Price Index (1982 = 100)			
Finished Goods	110.0	4.1	2.5
Intermediate Materials	109.5	5.6	5.4
Crude Materials	97.0	2.9	2.4
Ag Prices Received (1977 = 100)			
Nebraska	155	18.3	12.4
Crops	136	43.2	38.1
Livestock	168	9.8	3.6
United States	145	14.2	9.0
Crops	136	21.4	18.1
Livestock	154	9.2	2.5

U* = All urban consumers
Source: U.S. Bureau of Labor Statistics

that we have little room for expansion in the industrial sector at this time, unless extraordinary levels of investment are experienced.

Nebraska Outlook

Third quarter personal income statistics for Nebraska were released recently. They show a downtrend beginning in the fourth quarter of 1987. Most of the volatility is due to the agricultural sector. The nonagricultural sector, however, showed some weakness in the third quarter of 1988. We must be careful in using these figures because quarter-to-quarter changes are difficult to interpret.

Using changes from a year ago, virtually all major manufacturing sectors have increased with the exception of mining. Nonagricultural earnings had exceptional gains in the third quarter of 1988 in the following categories: agricultural services, construction, manufacturing, wholesale trade, and services. All of these categories showed strong advances in earnings well ahead of the rate of inflation.

Employment turned down marginally in December. Peak employment for the year was in November. The unemployment rate rose slightly in December. It had reached a low of 3.2 percent in August that was repeated in September and October. There is some seasonality in the unemployment series. The unemployment rate has decreased from a year ago. There is some concern in nonmetropolitan areas of the state in both the unemployment rate and unemployment levels. Unemployment has turned up, while the employment totals have turned down in comparison to nonmetropolitan areas.

The retail sales pattern continues to oscillate. The last available data are for October where a downturn is shown. I would describe retail sales in real terms as being relatively flat with large oscillations. These features make this series difficult to interpret. My overall conclusion is the Nebraska economy is still healthy.

Growth is likely to slow in 1989. Variation in the Nebraska economy will be attributable to change in the agricultural sector. Unfortunately, it is nearly impossible to forecast agricultural patterns either in the long term or the short term. It

Table IV
City Business Indicators
October 1988 Percent Change from Year Ago

The State and Its Trading Centers	Employment (1)	Building Activity (2)
NEBRASKA	1.6	11.5
Alliance	1.3	303.5
Beatrice	0.0	109.9
Bellevue	3.8	67.4
Blair	3.8	-12.4
Broken Bow	-1.0	-46.9
Chadron	3.2	-79.5
Columbus	8.7	19.9
Fairbury	-0.5	787.7
Falls City	-1.4	206.2
Fremont	0.5	2.1
Grand Island	0.2	0.6
Hastings	-0.3	0.1
Holdrege	-0.8	-58.8
Kearney	0.3	57.5
Lexington	0.5	-11.2
Lincoln	1.5	2.7
McCook	-1.6	10.4
Nebraska City	-0.8	3.3
Norfolk	0.5	-43.3
North Platte	0.9	38.1
Omaha	3.8	10.4
Scottsbluff	-0.4	78.6
Seward	-0.2	-6.3
Sidney	0.6	69.3
South Sioux City	6.9	549.0
York	-1.1	-56.7

(1)As a proxy for city employment, total employment (labor force basis) for the county in which a city is located is used.

(2)Building activity is the value of building permits issued as a spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Cost Index is used to adjust construction activity for price changes.

Sources: Nebraska Department of Labor and reports from private and public agencies.

Figure I
City Business Index
October 1988 Percent Change from Year Ago

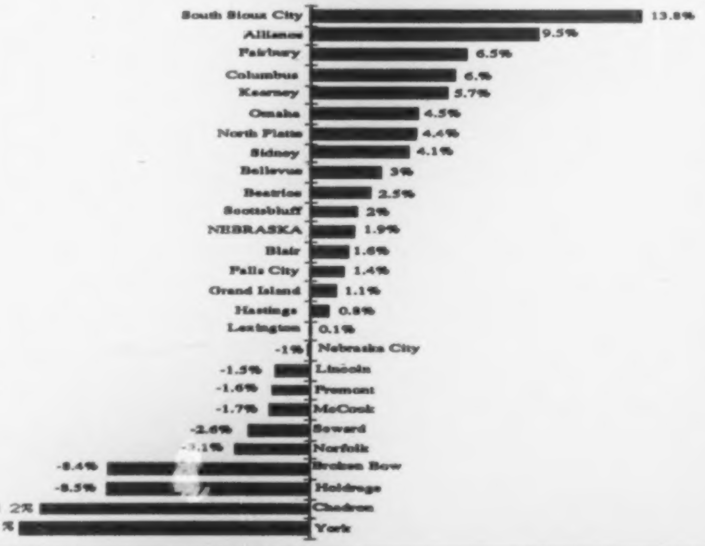
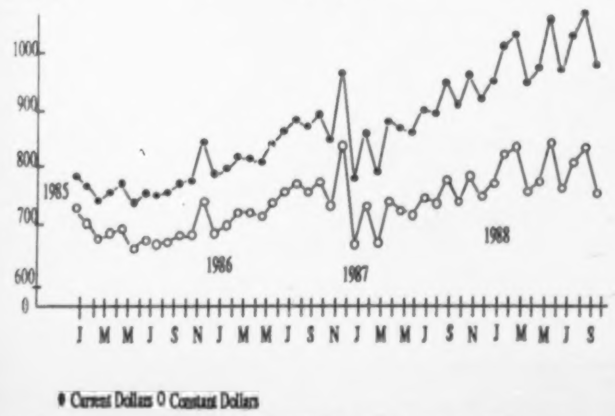


Table V
Net Taxable Retail Sales of Nebraska Regions and Cities

Region Number and City (1)	City Sales (2) Oct. 1988 (000s)	City Sales (2) % Change vs. Year Ago	Region Sales (2) Oct. 1988 (000s)	Region Sales (2) % Change vs. Year Ago	YTD % Change vs. Year Ago
NEBRASKA	$800,440	5.5	$915,677	5.8	10.8
1 Omaha	279,485	9.4	345,796	8.1	8.7
Bellevue	12,349	1.1	*	*	*
Blair	4,275	5.1	*	*	*
2 Lincoln	110,504	-1.5	126,946	-0.4	10.9
3 South Sioux City	4,057	7.9	5,778	0.7	16.4
4 Nebraska City	3,846	1.8	16,615	-0.5	7.2
6 Fremont	13,895	-0.7	26,482	1.5	10.9
West Point	2,793	15.3	*	*	*
7 Falls City	2,136	-3.9	8,284	-1.6	4.5
8 Seward	3,957	-1.2	13,823	4.7	10.6
York	5,768	-13.9	13,639	-2.3	10.6
10 Columbus	13,733	6.8	25,307	9.8	13.8
11 Norfolk	16,854	2.4	31,624	4.6	15.6
Wayne	2,763	9.1	*	*	*
12 Grand Island	30,212	6.0	43,379	7.0	14.4
13 Hastings	14,131	6.0	22,133	3.7	9.3
14 Beatrice	6,944	1.2	15,620	-2.0	7.6
Fairbury	2,556	-5.1	*	*	*
15 Kearney	16,748	11.6	23,789	9.3	17.9
16 Lexington	5,150	5.0	14,289	4.8	17.0
17 Holdrege	3,703	-5.1	6,990	-3.4	8.5
18 North Platte	14,030	9.5	17,861	8.3	14.8
19 Ogallala	4,453	0.5	9,700	8.3	12.7
20 McCook	6,989	0.4	9,921	-0.7	13.8
21 Sidney	3,663	6.9	7,753	10.1	8.1
Kimball	1,600	-2.3	*	*	*
22 Scottsbluff/Gering	15,646	2.3	22,252	3.2	6.5
23 Alliance	4,998	8.9	12,597	3.9	10.3
Chadron	2,338	-7.9	*	*	*
24 O'Neill	3,485	-1.6	12,276	4.3	13.8
Valentine	2,376	6.0	*	*	*
25 Hartington	1,326	-12.9	7,154	-9.5	6.3
26 Broken Bow	2,782	-7.7	10,459	3.6	18.1

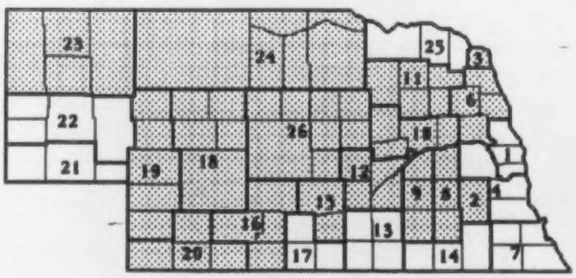
(1) See region map.
(2) Sales on which sales taxes are collected by retailers located in the state. Region totals include motor vehicle sales.
* Within an already designated region.
Compiled from data provided by the Nebraska Department of Revenue

Figure II
Nebraska Net Taxable Retail Sales
(Seasonally Adjusted)



(1) The Consumer Price Index (1982-84 = 100) is used to deflate current dollars into constant dollars

Figure III
Region Sales Pattern
YTD as Percent Change from Year Ago



Shaded areas are those with sales gains above the state average.

BR Scoreboard

Percent change from same month one year ago

	State	Metro+	Nonmetro
Motor Vehicle Sales (Oct.) Constant $	↑ 3.3%	↑ 0.7%	↑ 5.7%
Nonmotor Vehicle Sales (Oct.) Constant $	↑ 1.2%	↑ 1.4%	↑ 1.0%
Building Activity (Oct.) Constant $	↑ 9.1%	↑ 7.5%	↑ 11.2%
Employment (Dec.)	↑ 1.4%	↑ 4.1%	↓ -1.2%
Unemployment Rate* (Dec.)	↓ 4.0%	↓ 3.7%	↓ 4.3%

+Omaha and Lincoln
*Unemployment is this month's rate, not a percent change from year ago

Review and Outlook (continued)

is projected that agricultural income in Nebraska will return to a long-run trend showing increases of 3.0 percent per year. There will be big swings in agricultural income in the future as there have been in the past. Nevertheless, I make this forecast and hope to be close.

John S. Austin

Directory of University Of Nebraska Economic Development Programs Now Available

A comprehensive guide to University of Nebraska research and service programs that contribute to the economic development of Nebraska has just been released. The directory lists 66 programs, the directors, and the telephone numbers of economic development programs at the University of Nebraska-Lincoln, the University of Nebraska at Omaha, and the University of Nebraska Medical Center.

For copies of the directory, write or call :

Don Pursell
Economic Development Coordinator
University of Nebraska
109 Varner Hall
3835 Holdrege
Lincoln, Nebraska 68588-0743
(402)472-2861.

Business in Nebraska

PREPARED BY BUREAU OF BUSINESS RESEARCH
Association for University Business & Economic Research

Business in Nebraska is issued as a public service and mailed free of charge upon request to 200 CBA, University of Nebraska-Lincoln, Lincoln, NE 68588-0406. Copyright 1989 by Bureau of Business Research, University of Nebraska-Lincoln.

February 1989, Volume 44 No. 533

University of Nebraska-Lincoln-- Martin Massengale, *Chancellor*
College of Business Administration--Gary Schwendiman, *Dean*

Bureau of Business Research
F. Charles Lamphear, *Interim Director*
James R. Schmidt, *Acting Associate Director*
Merlin W. Erickson, *Research Associate*
Margo Young, *Editorial Assistant*
John S. Austin, *Statistical Coordinator*
David D. DeFruiter, *Statistical Technician*

The University of Nebraska-Lincoln does not discriminate in its academic, admission, or employment programs and abides by all federal regulations pertaining to same.

Non-Profit Org.
U. S. Postage
PAID
Lincoln, Nebraska
Permit No. 46

CONGRESSIONAL INFO SERVIC27023
SRI BR
4520 EAST-WEST HWY
BETHESDA, MD 20814

U7860-1
4/3/89

Business In Nebraska

March 1989
Vol. 44 No. 534

Prepared by the Bureau of Business Research
200 College of Business Administration
University of Nebraska-Lincoln
Lincoln, NE 68588-0406
402/472-2334

Nebraska Export Industries: An Examination of Those With Greatest Potential

David D. DeFruiter
Statistical Technician
UN-L Bureau of Business Research

Andrew Pitcher
Graduate Assistant
UN-L Bureau of Business Research

Considerable attention has focused on international trade in recent years because of growing concern over U.S. trade deficits and increasing market globalization. Individual states are exploring the international market for potential niches as one way to bring increased economic growth. *International* has been the key word of the 1980s because of trade deficits, market globalization, and economic growth opportunities for states and local areas.

This article studies the growing importance of global markets to Nebraska's economy. Several factors are examined—U.S. exports, Nebraska's exports (including comparative trade figures for the U.S.), fast growth exports, and foreign investments in Nebraska.

The most current available data are used in this research. National agriculture trade statistics are available through September 1988; limited trade statistics are available at the state and regional level for 1987; and the most current trade data for states and the nation (which include an industry breakdown for exporting and employment) are for 1984. All data cited are in current dollars.

U.S Exports

The U.S. exported about 10 percent of Gross National Product in 1987 or about $428.0 billion in direct sales of goods and services to foreign buyers. Table 1 provides a general summary of U.S. export statistics of goods for 1987.

Total manufacturing formed nearly 60 percent of total U.S. exports for 1987 (Table 1). Machinery and transportation equipment led the various manufacturing groups listed in Table 1 with over $108,596.0 million in exports, followed by chemicals with $26,380.9 million. Agriculturally related products represented 11.74 percent of total U.S. exports for 1987 or $28,636.2 million in direct sales.

Total direct exports constituted over 10 percent of total shipments by U.S. manufacturing enterprises in 1987. Table 2 shows that over $194.3 billion of manufactured materials and products were directly exported in 1987. This table also provides greater detail of manufactured exports for 1987 and comparative data for 1985.

Direct export figures used in this study represent the actual export of goods as reported by the manufacturers. Not included in direct exports are sales of manufactured goods to other industries nationwide, who incorporate them into their own exports. This component is referred to as *indirect export sales*. Although an industry may not export a finished product, many industries contribute either to the transformation of materials used in final exports or provide services such as transportation, communication, and insurance vital to exporting. Table 3 shows the contribution of indirect and direct exports for Nebraska and the U.S. The sum of direct and indirect is termed *export-related*.

Table 1
U.S. Exports for 1987

Sector	Market Value ($ millions)	% of Total Exports
Agriculture	28,636.2	11.74
Nonagriculture	215,222.6	88.26
TOTAL	243,858.8	100.00
Food & live animals	19,178.8	7.86
Beverages & tobacco	3,666.7	1.50
Crude materials	20,416.3	8.37
Mineral fuels	7,713.1	3.16
Oils & fats	981.4	0.40
Chemicals	26,380.9	10.82
Manufactured goods by material	17,136.1	7.03
Machinery & transport equipment	108,596.0	44.53
Miscellaneous manufactured articles	19,409.0	7.96
Other	20,380.7	8.36
TOTAL	243,858.8	100.00

Source: *Highlights of U.S. Export and Import Trade.*

Table 2 also introduces the Standard Industrial Classification (SIC) coding system that separates economic activities into broad divisions (manufacturing, mining, retail trade, etc.). Each division further is divided into major sectors (two digit SIC), then into industry groups (three digit SIC), and finally into industries (four digit SIC).

Distribution of manufactured goods was significantly skewed toward a few industrial sectors. Five of the 20 major two digit SIC manufacturing sectors accounted for nearly 55 percent of direct export sales in 1987. The top five are: non-electric machinery, transportation equipment, chemicals and allied products, electric and electronic equipment, and food and kindred products.

Table 2
U.S. Exports of Manufactured Materials and Products

SIC Code	Industry	1987 Market Value ($ mil)	% of Total Exports	1985 Market Value ($ mil)	% of Total Exports
20	Food & kindred products	12,320.0	6.34%	10,053.8	5.92%
21	Tobacco products	2,309.6	1.19%	1,268.0	0.75%
22	Textile mill products	1,890.8	0.97%	1,461.6	0.86%
23	Apparel & other textile products	1,490.2	0.77%	1,018.7	0.60%
24	Lumber & wood products	3,961.3	2.04%	2,667.9	1.57%
25	Furniture & fixtures	550.1	0.28%	482.6	0.28%
26	Paper & allied products	5,676.4	2.92%	3,886.4	2.29%
27	Printing & publishing	1,525.1	0.78%	1,249.8	0.74%
28	Chemicals & allied products	26,093.8	13.43%	21,848.7	12.87%
29	Petroleum & coal products	4,425.9	2.28%	5,353.7	3.15%
30	Rubber & miscellaneous plastics products	3,709.0	1.91%	2,764.7	1.63%
31	Leather & leather products	688.8	0.35%	478.1	0.28%
32	Stone, clay, & glass products	2,065.5	1.06%	1,805.8	1.06%
33	Primary metal industries	5,855.3	3.01%	4,823.5	2.84%
34	Fabricated metal products	5,642.8	2.90%	5,765.1	3.40%
35	Machinery, except electrical	40,851.3	21.02%	37,478.1	22.08%
36	Electric & electronic equipment	24,359.3	12.54%	18,908.2	11.14%
37	Transportation equipment	37,985.0	19.55%	38,024.5	22.40%
38	Instruments & related products	10,185.6	5.24%	8,623.0	5.08%
39	Miscellaneous manufacturing industries	2,718.8	1.40%	1,773.1	1.04%
	Total	*194,304.6	100.00%	169,735.1	100.00%

* This number will not equal the nonagriculture figure in Table 1 because such nonagricultural commodities as mining, fishing, etc. are not part of the manufacturing division.
Source: *Trade and Employment*, U.S. Department of Commerce.

Table 3
Contribution of Direct and Indirect Exporting In Nebraska and U.S.

SIC 1984 Code	Nebraska			U.S.			% of Manufacturing Employment Export-Related	
	% of Shipments Exported							
	Direct	Indirect	Total	Direct	Indirect	Total	NE	US
-- Total	5.6%	3.2%	8.8%	5.4%	5.7%	11.1%	10.0%	11.9%
20 Food & kindred products	4.1%	1.4%	5.5%	2.7%	1.0%	3.7%	4.5%	4.8%
21 Tobacco products	N/A	N/A	N/A	18.4%	1.9%	20.3%	N/A	14.6%
22 Textile mill products	N/A	N/A	N/A	2.4%	4.4%	6.8%	N/A	7.4%
23 Apparel & other textile products	0.6%	0.9%	1.5%	1.1%	0.9%	2.0%	0.3%	3.0%
24 Lumber & wood	0.1%	0.9%	1.1%	2.8%	3.8%	6.6%	0.3%	8.3%
25 Furniture & fixtures	1.3%	0.6%	1.9%	1.5%	1.0%	2.5%	0.3%	2.7%
26 Paper & allied products	0.2%	7.4%	7.6%	3.0%	6.7%	9.7%	7.1%	10.6%
27 Printing & publishing	0.1%	3.3%	3.4%	0.8%	3.0%	3.8%	3.6%	4.2%
28 Chemicals & allied products	2.2%	4.5%	6.7%	9.5%	5.7%	15.2%	7.1%	16.6%
29 Petroleum & coal products	N/A	N/A	N/A	2.7%	4.5%	7.2%	N/A	7.8%
30 Rubber & miscellaneous plastics	5.4%	8.7%	14.1%	3.4%	7.7%	11.1%	14.0%	11.7%
31 Leather & leather products	N/A	N/A	N/A	2.7%	0.8%	3.5%	N/A	6.8%
32 Stone, clay, & glass products	1.6%	2.1%	3.7%	3.2%	4.2%	7.4%	0.3%	7.2%
33 Primary metal industries	1.5%	18.1%	19.6%	2.8%	16.3%	19.1%	16.7%	19.5%
34 Fabricated metal products	4.5%	4.6%	9.1%	4.2%	7.5%	11.7%	9.1%	11.6%
35 Machinery, except electrical	25.1%	4.3%	29.4%	13.4%	6.5%	19.9%	29.0%	21.5%
36 Electric & electronic equipment	2.7%	7.9%	10.6%	9.0%	9.8%	18.8%	13.2%	18.2%
37 Transportation equipment	4.4%	2.7%	7.1%	10.5%	2.3%	12.8%	6.8%	12.8%
38 Instruments & related products	8.3%	1.1%	9.4%	13.7%	2.4%	16.1%	7.5%	15.4%
39 Misc. manufacturing industries	4.8%	1.4%	6.2%	4.6%	1.8%	6.4%	0.3%	7.4%
-- Administrative & auxiliary office	N/A	N/A	N/A	N/A	N/A	N/A	6.3%	12.5%

N/A Not applicable
Source: *Origin of Exports of Manufactured Products*, Bureau of the Census.

Another measure of exports is employment. It was estimated that in 1984, 11.9 percent of the persons employed in manufacturing were employed in the production of exported-related sales (Table 3). The manufacturing sectors with the highest proportion of export-related employment were non-electrical machinery (21.5 percent), primary metal industries (19.5 percent), electric and electronic equipment (18.2 percent), chemicals and allied products (16.6 percent), and instruments and related products (15.4 percent). These sectors, plus tobacco products, exported over 15 percent of shipments.

Turning to agriculture, agriculturally related commodities formed approximately 12 percent of all U.S. exports in the 1987 (see Table 1). Table 4 presents a agricultural commodities breakdown in the U.S. for both exports and cash receipts. 1987 cash receipts for Nebraska also are shown (actual export data not available for Nebraska). The largest share of the U.S. agricultural commodity exports came from the grains and feed category, with almost 36 percent of the total. The largest subcategories were wheat and flour with a little over 13 percent of the total and corn with slightly over 12 percent of the total agricultural commodi-

Table 4
Major Agricultural Commodities and Cash Receipts

	U.S. Exports*				Cash Receipts**	
	1987		1988			
Commodity	Market Value ($ mil)	% of Total	Market Value ($ mil)	% of Total	1987 U.S. ($ mil)	1987 Nebraska ($ mil)
Grains and feed	9,301	33.4%	12,743	35.9%	18,471.73	1,385.47
Wheat & flour	3,084	11.1%	4,638	13.1%	4,868.61	167.94
Corn	3,048	10.9%	4,338	12.2%	8,806.52	1,003.08
Soybeans and products	4,205	15.1%	5,142	14.5%	9,565.15	414.46
Livestock and products	3,956	14.2%	4,913	13.9%	44,715.90	4,616.69
Poultry and products	594	2.1%	648	1.8%	11,486.54	48.44
Dairy products	495	1.8%	541	1.5%	17,828.60	161.82
Horticultural products	3,152	11.3%	3,818	10.8%	7,868.60	1.63
Tobacco	1,204	4.3%	1,296	3.7%	1,826.78	N/A
Cotton & linters	1,429	5.1%	2,136	6.0%	4,027.44	N/A
Total***	#27,876		35,465		138,094.41	6,823.05

* Fiscal year data (October-September).
** Calender year data (January-December).
*** Figures will not sum to total because only major items are listed.
#This figure will be close but will not equal the 1987 agriculture-related export figure in Table 1 because this number is reported for the fiscal year.
N/A Not applicable
Source: *Economic Indicators of the Farm Sector*, Department of Agriculture, 1987.

Table 5
Nebraska Manufacturing Export Industries by Major Group for 1984

SIC Code	Total Shipments* ($ mil)	Direct Exports** ($ mil)	Supporting Exports*** ($ mil)	Total Export-Related ($ mil)	Total Employment (000)	Direct Export Employ. (000)	Supporting Export Employ. (000)	Total Export-Related Employment (000)
-- NEBRASKA TOTALS	15,064.4	838.0	480.1	1,318.1	92.2	5.4	3.8	9.2
20 Food & kindred products	8,387.0	345.7	119.0	464.7	24.2	0.8	0.3	1.1
23 Apparel & other textile products	98.4	0.6	0.9	1.5	1.8	0.3	0.3	0.6
24 Lumber & wood products	190.1	0.2	1.8	2.0	2.3	0.3	0.3	0.6
25 Furniture & fixtures	197.0	2.5	1.2	3.7	2.0	0.3	0.3	0.6
26 Paper & allied products	131.8	0.3	9.8	10.1	1.4	0.3	0.1	0.4
27 Printing & publishing	461.6	0.4	15.2	15.6	8.4	0.3	0.3	0.6
28 Chemicals & allied products	622.4	14.0	28.2	42.2	2.8	0.1	0.1	0.2
29 Petroleum & coal products	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
30 Rubber & misc. plastics products	353.2	19.0	30.7	49.7	4.3	0.2	0.4	0.6
31 Leather & leather products	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
32 Stone, clay, & glass products	251.2	3.9	5.2	9.1	2.2	0.3	0.3	0.6
33 Primary metal industries	571.0	8.4	103.6	112.0	2.4	0.3	0.4	0.7
34 Fabricated metal products	638.1	28.7	29.4	58.1	6.6	0.3	0.3	0.6
35 Machinery, except electrical	1,274.1	319.4	55.1	374.5	12.4	3.0	0.6	3.6
36 Electric & electronic equipment	715.7	19.2	56.4	75.6	7.6	0.2	0.8	1.0
37 Transportation equipment	560.2	24.4	15.4	39.8	4.4	0.2	0.1	0.3
38 Instruments & related products	475.9	39.5	5.1	44.6	4.0	0.2	0.1	0.3
39 Misc. manufacturing industries	50.0	2.4	0.7	3.1	1.1	0.3	0.3	0.6
-- Auxiliaries	N/A	N/A	N/A	N/A	3.2	0.0	0.2	0.2

N/A Not applicable
* Includes total domestic and export shipments for all manufacturing establishments.
** Includes only the value of manufactured products exported by the producing plants.
*** Includes shipments of components, parts, supplies, etc., used by plants producing the export product.
Source: Bureau of the Census, *Annual Survey of Manufactures: Origin of Exports of Manufactured Products, 1984.*

ties exported in the U.S. Even though the time periods are different for exports and receipts, it appears that the value of exports for grains and feeds was roughly half the value of total U.S. cash receipts in 1987. Corn exports alone formed about one-third of total cash receipts, indicating the agricultural division's dependence on foreign markets for a substantial share of their market.

Nebraska Exports

Nebraska's manufacturing industries had over $1.3 billion in sales of export-related manufactured goods in 1984. Table 5 shows a breakdown for Nebraska export sectors. Over $838 million was in direct export sales, while another $480 million was in sales of manufactured goods to other industries (indirect exports) nationwide. This ranked Nebraska 35th among all 50 states and the District of Columbia in the value of export-related manufactured products sold. Of Nebraska's export-related sales of manufactured goods, over 64 percent was in the food products and the non-electric machinery sectors. Nebraska was the 11th largest exporter of food products in the nation and was ranked 28th nationally in exports of non-electric machinery.

The fact that in 1984 the Nebraska food and kindred products sector contributed 35 percent to the state's total of indirect and direct exports illustrates the important contribution of agriculture to Nebraska exports. Because actual figures on state level agricultural exports are not compiled, the important role that Nebraska's agriculture serves in U.S. agricultural exports can be viewed only indirectly. For instance, Nebraska was ranked fourth overall in the U.S. for total agricultural commodity receipts in 1987. The state was also the third largest producer of corn, with 11 percent of the total U.S. cash receipts, and the 11th largest producer of wheat (3 percent). For the livestock products category, the state was ranked third (10 percent). (Agricultural exports will be the subject of a future *Business in Nebraska* article.) Agricultural exports play a vital role in U.S. exports. For Nebraska, with its strong agricultural base, this division is even more crucial. Another economic division of perhaps equally strong growth potential in the state, however, is Nebraska's manufacturing sector.

Total export-related manufacturing accounted for 8.8 percent of Nebraska's total manufactured goods produced (Table 3), ranking the state 44th in this measure of total exports of goods. Given Nebraska's geographic isolation from coastal ports and U.S. borders, it is not surprising that the state had a lower manufactured export component relative to the nation. Table 3, however, shows that Nebraska directly exported 5.6 percent of its total manufacturing shipments in 1984, slightly above the national average for that year. Nebraska had three exporting sectors that directly exported more than 5 percent of their total shipments. The non-electric machinery sector led with 25.1 percent of total shipments directly exported to foreign markets (Table 3).

A recent article published by the Federal Reserve Bank of Kansas City ("Regional Exports of Manufactured Products," *Economic Review*) showed that in 1987 the Plains region (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and

Table 6
U.S. Fastest Growing Export Commodity Groups* and Nebraska's Corresponding Employment

SIC Code	Sector	1987 U.S. Exports (millions)	1986 Nebraska Employment	1986 Firms in Nebraska
3523	Farm machinery & equipment	$1,075.2	3,750 e	83
3661	Telephone & telegraph apparatus	964.5	3,750 e	2
2752	Commercial printing, lithographic	17,378.0	2,710	112
3841	Surgical & medical instruments	799.2	1,750 e	7
3676	Electronic resistors	789.2	1,750 e	2
3573	Electronic computing equipment	212.4	1,750 e	7
3561	Pumps & pumping equipment	329.1	1,146	8
2048	Prepared feeds	39.7	1,145	86
3423	Hand & edge tools, n.e.c.	3,156.6	750 e	5
2086	Bottled & canned soft drinks	675.2	750 e	14
2542	Metal partitions and fixtures	298.3	750 e	3
2834	Pharmaceutical preparations	289.3	750 e	4
3613	Switchgear & switchboard apparatus	186.4	750 e	3
3357	Nonferrous wire drawing & insulating	156.4	750 e	2
3799	Transportation equipment, n.e.c.	111.9	750 e	2
3531	Construction machinery	434.2	687	7
2047	Dog, cat, & other pet food	342.4	564	4
2751	Commercial printing, letterpress	1,825.9	559	51
2653	Corrugated & solid fiber boxes	37.0	514	7
2077	Animal & marine fats & oils	3,492.5	377	12
3339	Primary nonferrous metals, n.e.c.	2,407.6	375 e	1
3312	Blast furnaces & steel mills	654.6	375 e	1
3411	Metal cans	490.8	375 e	1
2037	Frozen fruits & vegetables	272.1	375 e	4
3675	Electronic capacitors	266.3	375 e	1
3662	Radio & T.V. communication equipment	152.3	375 e	8
3499	Fabricated metal products, n.e.c.	1,469.1	310	9
3679	Electronic components, n.e.c.	62.2	287	9
3949	Sporting & athletic goods, n.e.c.	729.5	274	11
3568	Power transmisssion equipment, n.e.c.	2,499.1	214	5

*Defined as export commodity groups with increase of 25 percent or more and $5 million or more from first quarter 1987

e These figures represent a median value because *County Business Patterns* gives only a range of employment for reasons of confidentiality.

South Dakota) contributed 3.88 percent of total U.S. manufacturing exports. This article noted that these direct exporting numbers reflect the state where the exports were consolidated or shipped (port of embarkation) and not necessarily where they originally were produced or processed (indirect exports).

Nebraska's component which adds value to exporting by stage of processing (indirect exporting) is lower than the national average. This may reflect a lack of industries to support further processing in Nebraska. Indirect exporting, however, is still important to Nebraska. Table 3 shows the importance of supplying materials and products (indirect exporting) to others that directly export. Four sectors in Nebraska indirectly sold 7 percent or more of their output to export-related demand, with the primary metal industries indirectly exporting 18.1 percent of its 1984 output. The other three industrial groups that indirectly exported more of their shipments than the national average were: rubber and miscellaneous plastics products (8.7 percent), electric and electronic equipment (7.9 percent), and paper and allied products (7.4 percent) (see Table 3).

Total export-related output in Nebraska for 1984 also provided some 9,200 manufacturing jobs in the state, with 39.0 percent of these jobs found in the non-electric machinery sector (Table 5). This export-related employment constituted approximately 10.0 percent of Nebraska's manufacturing labor force or one of every ten jobs for 1984. Four manufacturing sectors in the state employed 13 percent or more of their workforce in the production of direct and indirect exports. Besides the non-electric machinery sector, the other three were: rubber and miscellaneous plastics, primary metals, and electric and electronic equipment. In addition, an estimated 12,100 workers in such nonmanufacturing divisions as transportation, communication, agriculture, and services owed their jobs to Nebraska's output of total export-related manufactured goods.

The Kansas City Federal Reserve article cited earlier indicates that the Plains region's most major international markets for manufactured goods were Canada (33.4 percent), Japan (11.6 percent), and Great Britain (7.5 percent). The Plains region exceeded the United States in terms of the proportion of export-related manufactured goods in 1987 for the preceding countries.

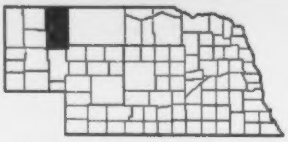
Fast Growth Exports

Given the importance of exports, it becomes crucial to consider which export industries represent the best potential for future growth in Nebraska. For the purpose of this study, the fastest growing national export industries have been defined as the U.S. domestic export commodity groups with an increase in value of 25 percent or more and with an increase of $5 million or more from the first and second quarters of 1987 to the same period of 1988. National domestic export commodity groups, specified by four digit SIC code, were identified in the first and second quarter 1988 *Trade and Employment* publications from the U.S. Department of Commerce.

County Business Patterns, also published by the Department of Commerce, was used to identify the number of Nebraskans employed in the fastest growing national export industries.

County of the Month

Sheridan



Size of county: 2,481 square miles, ranks 4th in the state

Population: 7,200 (estimated) in 1987, a change of -4.1 percent from 1980

Median age: 33.6 years in Sheridan County, 29.7 years in Nebraska in 1980

Per capita personal income: $12,510 in 1986, ranks 57th in the state

Unemployment rate: 3.2 percent in Sheridan County, 4.9 percent in Nebraska for 1987

Net taxable retail sales ($000): $33,799 in 1987, a change of +2.2 percent from 1986; $34,537 during January-November 1988, a change of +14.4 percent from the same period one year ago

Numer of business and service establishments: 208 in 1986; 69 percent with less than five employees

Nonfarm employment (1987):	**State**	**Sheridan County**
Wage & salary workers	659,223	1,794
	(percent of total)	
Manufacturing	13.3%	10.8%
Construction and Mining	3.9	0.4
TCU	6.5	3.8
Retail Trade	18.7	25.8
Wholesale Trade	7.1	7.3
FIRE	7.3	5.1
Services	22.7	10.0
Government	20.5	36.8
Total	100.0%	100.0%

Agriculture:

Number of farms: 704 in 1982, 723 in 1978
Average farm size: 2,054 acres in 1982
Market value of farm products sold: $51.8 million in 1982 ($73,581 average per farm)

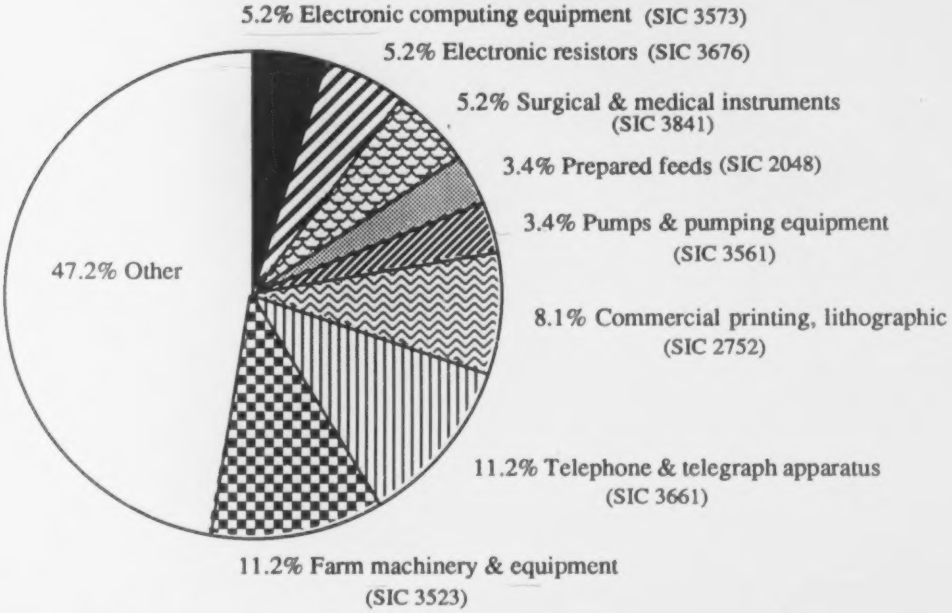
Sources: U.S. Bureau of the Census, U.S. Bureau of Economic Analysis, Nebraska Department of Labor, Nebraska Department of Revenue

Merlin W. Erickson

The fastest growing national exporting manufacturing group comprises a wide range of industries. There are a total of 192 four digit SIC manufacturing industries that form this group. Sixty-six of these narrowly defined industries, employing 33,625 persons, were recorded as being represented in Nebraska. (A later issue of *Business In Nebraska* will report the results of a current Bureau of Business Research study that examines the competitive advantages of these sectors in Nebraska. This analysis should shed some light on prospects for industrial expansion in Nebraska.) The top 30 four digit industries are shown in Table 6. Nebraska has a relatively small manufacturing base, with 85,926 (or 11.1 percent) of 772,000 total employment in the state in 1986. Over 39.0 percent of the state's workforce in manufacturing was employed in industries that were included in the fastest growing U.S. export commodity industries. If these export industries are grouped into a broader three digit SIC industrial group that encompasses one or more of these four digit SIC growth industries, the employment level rises to over 50 percent of Nebraska's manufacturing division.

Nebraska shows significant employment strengths in eight of these fastest growing SIC commodity industries (see Figure 1). The following commodity industries have a thousand or more employees: farm machinery and equipment (3,750), telephone and telegraph apparatus (3,750), lithographic commercial print-

Figure 1
Percentage Breakdown of Total Nebraska Employees in the Fastest Growing U.S. Export Commodity Groups



ing (2710), electronic computing equipment (1,750), electronic resistors (1,750), surgical and medical instruments (1,750), pumps and pumping equipment (1,146), and prepared feeds (1,145).

Of the highest ranking U.S. boom export commodity industries, Nebraska appears to have a comparative advantage in the industry of farm machinery and equipment, with 83 firms listed in the *County Business Patterns* in 1986. These four digit industries tend to be scattered throughout the state, with firms servicing small rural communities. For exports to develop in such industries, it may be necessary for the state to develop further the supporting infrastructure.

Another Nebraska industry that appears to possess the potential for growth is prepared feeds, with 86 industries listed by four digit SIC code. This industry seems a logical choice for expansion in Nebraska because of the availability of raw materials produced in the state. The four digit SIC industries of commercial printing (both lithographic and letterpress) have a combined employment level of 3,369 persons employed in 163 different Nebraska companies. The industry of telephone and telegraph apparatus may be a potential growth area in Nebraska with its already large employment base. This employment base, however, is centered in one firm. American Telephone & Telegraph Company in Omaha accounts for an estimated 95 percent of the employees in this Nebraska industry. The four digit industry of pumps and pumping equipment also perhaps should be considered as an area for potential growth, with 1,146 employees in eight different factories in Nebraska.

The seven fastest growing national manufacturing industries in which Nebraska employment is 1,000 or more hold potential for contributing to future economic development. Nebraska also has the potential for further export growth in industries that have developed from the state's agricultural base. The farm machinery and equipment and prepared feeds industries are strong examples. There are some manufacturing export industries that have shown rapid growth and may have further growth potential although they are not among the larger employers in the state. These may represent industries with a competitive advantage, particularly if it can be shown that the competitive advantage exits statewide rather than being unique to a single firm's location. One such industry is hand and edge tools with approximately 750 employees in five locations in Nebraska. About half of the persons in this industry are employed by one company that currently is exporting goods in nearly 100 countries. Another industry that may offer some potential for export growth, with seven different companies located in the state, is construction machinery. These companies are varied in size and together employ an estimated 687 workers.

There are other possible industries that may be underdeveloped in terms of export potential in Nebraska. Two examples are primary nonferrous smelting products and metal cans. These were ranked numbers one and 18 respectively in terms of the fastest growing export commodity groups in the U.S. Both industries employ between 250 and 500 persons in Nebraska. There is currently one firm in the primary nonferrous smelting product industry in Omaha and one metal can company in the state.

Foreign Investment in Nebraska

Another dimension of the impact of international trade on the Nebraska economy is foreign investment. This investment

Table 7
Foreign Investors in Nebraska by Industry

Product	Foreign Investor	Country
Zoo animal meat	Equinox N.V.	Belgium
Nitrogen fertilizer	Cominco Inc.	Canada
Frozen foods	John Labatt, Ltd.	Canada
Beet sugar	Tate and Lyle, Ltd.	England
Meat pet food	Grand Metropolitan	England
Architecture/engineer	Bouygues Company	France
Calcium phosphate	ILS Food Aquetaene	France
Electronics	Shizuki Electric Co.	Japan
Farm equipment	Kubota Tractor Ltd.	Japan
Grain processing	Mitsubishi Trading Corp.	Japan
Meat/poultry products	Nichirei Corporation	Japan
Motorcycles	Kawasaki Motors	Japan
Motorcycle accessory	Tokyo Seat Corporation	Japan
Pipes	Mitsubishi Heavy Ind.	Japan
Air pumps	Mason & Porter Ltd.	New Zealand
Real estate	Saudi Arabia	Saudi Arabia
Medical equipment	Arjo Corporation	Sweden
Insurance	Zurich Insurance	Switzerland
Pharmaceuticals	Sandoz Inc.	Switzerland
Snack food	Sandoz Inc.	Switzerland

Source: Nebraska Department of Economic Development, 1987.

represents overseas firms finding a competitive advantage by investing resources in the state. Table 7 shows a list of Nebraska companies wholly or partly owned by foreign investors.

There are nine major countries invested in Nebraska. These countries represent a wide variety of foreign investments, with products as diverse as pharmaceutical products to pipes. Many of these industries, such as frozen foods, meat pet foods, and pure beet sugar, are directly related to Nebraska's agricultural base.

Conclusions

This study identifies some Nebraska export industries that may have the greatest potential for contributing to economic growth and development. This potential growth could occur either in direct export of goods or in indirect contributions to other industries that fall under the umbrella of the fastest growing exporting industries in the U.S.

Perhaps the most significant factor impeding export development in the state is one that is the least costly to overcome--the attitude of local businesses toward exporting. Geographic isolation has tended to stop Nebraskans from searching for new markets. There are many risks in exporting, but also the possibility of high returns. We must learn new skills in marketing Nebraska products, and we must understand cultural differences between our trading partners and ourselves.

References

Nebraska Department of Economic Development, Small Business Division, *International Investment in Nebraska by Nation of Origin, 1987.*

Smith, T.R., "Regional Exports of Manufactured Products," *Economic Review* (January 1989), pp. 21-31.

U.S. Department of Agriculture, Economic Research Service, *Outlook for U.S. Agricultural Exports* (November 1988).

U.S. Department of Agriculture, Economic Research Service, *Economic Indicators of the Farm Sector, State Financial Summary* (1987).

U.S. Bureau of the Census, *Annual Survey of Manufactures, Origin of Exports of Manufactured Products, 1984* (U.S. Government Printing Office, Washington, D.C., 1987).

U.S. Bureau of the Census, *County Business Patterns, 1986, Nebraska* (U.S. Government Printing Office, Washington, D.C., 1988).

U.S. Bureau of the Census, *Highlights of U.S. Export and Import Trade, December 1987* (U.S. Government Printing Office, Washington, D.C., 1988).

U.S. Bureau of the Census and U.S. Bureau of Labor Statistics, *Trade & Employment* (U.S. Government Printing Office, Washington, D.C., 1988).

Nebraska's Highways

Gasohol is important to Plains states in the search for alternative uses for agricultural products--low expected growth in food consumption forces producers to look for new uses for crops. According to the Federal Highway Administration, Nebraska led the Plains states (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota) in 1987 with a 31.2 percent gasohol to gasoline use ratio. Iowa was second with 29.0 percent, followed by North Dakota with 16.5 percent. Missouri had the lowest ratio of the group, 0.8 percent. Iowa led in total gallons (397,029), and Nebraska was second with 241,984 gallons.

Lower tax rates on gasohol compared with those on gasoline appear to increase gasohol consumption. Missouri has no difference between gasohol and gasoline taxes and used only 21,912 gallons of gasohol. In contrast, the Nebraska tax on gasohol is 3.0 percent lower than the tax on gasoline, leading to a higher rate of utilization. The tax differential and utilization level relation does not hold for all states. Iowa only has a 1.0 percent difference, yet has high gasohol consumption.

Nebraska had 1,281,605 motor vehicles registered in 1987, trailed by only North Dakota and South Dakota among the Plains states. Missouri led the Plains states with 3,685,020 registrations. When motor vehicle registrations are compared on a per capita basis, Nebraska's 0.82 registrations per person topped only Minnesota and Missouri among the Plains states. North Dakota ranked first in per capita motor vehicle registration comparisons with 0.97, followed by Iowa and South Dakota with 0.95. The Plains states per capita figures compare favorably with the U.S. per capita figure of 0.74. Nebraska ranked third among the Plains states in a comparison of percentage growth rates of motor vehicle registrations from 1986 to 1987 at 1.9 percent. Minnesota led with 2.7 percent growth, followed by Iowa with 2.3 percent gain.

Nebraska was ahead of only North Dakota and South Dakota in the Plains group in total public road and street miles with 92,401 miles. Kansas led with 132,931 miles, followed by Minnesota with 132,843 miles. On a per capita basis, North Dakota led with 0.128 miles per person, followed by South Dakota with 0.104. Nebraska was third with 0.058 miles per person. Minnesota and Missouri rank at the bottom of the group with 0.031 and 0.023 miles per person, respectively.

Rebecca S. Cox

This short is the second in a series written by undergraduate research assistants at the Bureau of Business Research. The undergraduate research assistant program is an innovation at the UN-L College of Business this semester designed to give students experience in applied research, statistics, and analysis.

Review and Outlook

The Producer Price Index (PPI) increased 1.0 percent from December. Most of the increase was in energy and food. The PPI increases, except energy and food, were in line with the overall increases of the PPI for the last year. The Consumer Price Index (CPI) increased 0.6 percent, the largest single jump in many years. The stock market fell sharply the day the report was released. Most of the gains came from food and energy. Food and beverage prices advanced 0.7 percent from December, as did transportation prices. Both energy and medical care price indexes rose 0.8 percent. Removing the increases for food and energy, the CPI rose 0.5 percent from December.

Chart I displays changes in the CPI for the past several years. Prices have been steady for the past several years. The exception to the pattern is 1986 when price inflation slowed due to a drop in energy prices.

Although we should be concerned about inflation, we should not overreact to a single month's news. I suspect that near-term inflation figures will not reflect the January experience and that prices will moderate. Recent changes in food prices can be attributed to the drought. Most of the impact of the drought has worked through the price system. Chart II displays the drought-related effects on food prices in the second half of 1988. Food prices likely will moderate in the near future. The bigger question mark comes in the energy area, an area influenced by many international political and other factors.

A key indicator to gauge monetary policy is the federal funds rate. Federal funds represent overnight borrowing between banks. In February and March 1988, the federal funds rate was around 7.0 percent, but toward the end of the year had risen to 9.0 percent. In recent weeks, it has been 9.5 to 10.0 percent.

GNP figures for the fourth quarter of 1988 recently were revised. The Bureau of Economic Analysis estimates that real GNP will increase 2.5 percent due to the release from drought effects alone.

Total housing starts have fallen for the last three years. A change in tax laws eliminated some of the benefits of investing in residential property—multiple unit housing starts peaked at the end of 1985 and have decreased since then. In 1988, multiple unit housing starts were about 400,000 units, 75,000 below 1987.

Single family housing starts, however, continued to climb throughout 1986, peaked in the early months of 1987, fell erratically throughout the remainder of 1987, and reached a plateau near the beginning of 1988. Throughout 1988, housing starts retained their volatile pattern, showing some slight increases toward the end of the year. For the year as a whole, single family housing starts were 1,080,000 units. Housing starts probably will be lower in 1989 than in 1988 because of the possibility of increasing interest rates.

Should housing be protected from business cycles? One argument for such protection is that housing is too important to the economy to be allowed to vary over the business cycle. To protect the housing industry, interest rates could be stabilized. This would return monetary policy to the days when the Federal Reserve underwrote federal government debt issues by fixing interest rates. Alternatively, the federal government could make up the difference between current interest rates and some steady (presumably low) interest rate level. In this age of concern over growing budget deficits, it is unlikely that such a major policy will be undertaken.

Another argument for protecting housing from the business cycle is that housing is the single largest asset of most persons. Home owners had good news throughout the 1960s and early 1970s when house prices increased steadily. It wasn't until the late 1970s that the general public discovered that real estate values could go down as well as up.

Last, one could argue that housing should be protected because our society has a goal that persons should be well housed.

Chart I
Consumer Price Index--All Items
Month to Month Percent Change vs. Year Ago

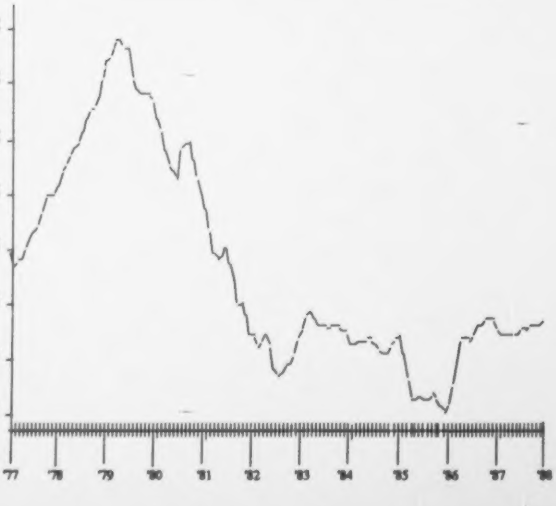
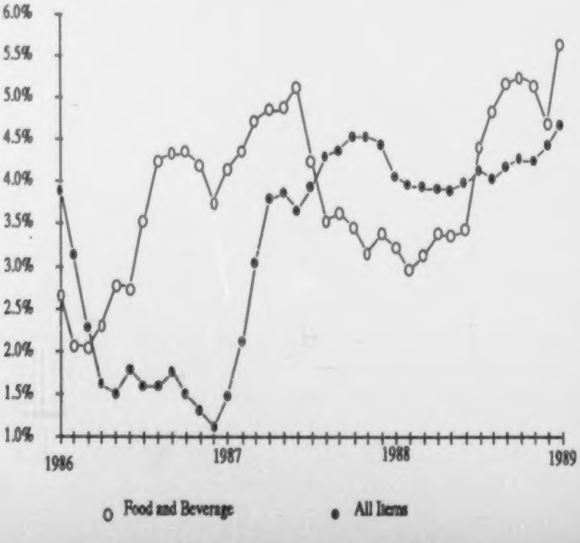


Chart II
Consumer Price Index--All Items and Food and Beverage
Month to Month Percent Change vs. Year Ago



It is difficult to see how that goal can be reached without major intervention from the federal government.

Complementing the housing area is the role of thrift institutions. The original concept behind thrifts was to encourage persons to build their own homes, with the idea that long-term mortgages could be financed with short-term deposits. That system worked for many years because savings and loan depositors were given a fixed rate on their savings below corresponding market rates. Bank deregulation removed savings rate ceilings. Savings and loans were made to look more like banks. They were allowed to issue checks and enter other loan areas. Some thrift institutions succeeded, others failed. Some pursued a fast buck and lost; some never changed their policies and held too many loans in their portfolios. These latter institutions were caught in a bind when interest rates rose.

Now, healthy thrifts and the taxpayers will be forced to bail out ailing savings and loans. Examination programs of the FSLIC need to be strengthened. This will necessitate increases in the budget of the FSLIC. Changes in the savings and loan industry will decrease its role in providing home mortgages.

Housing prospects for 1989 can be maintained with current levels of personal income. Baby boomers have been in the primary house buying age for some time now, but there are still enough of them left to support further increases in housing stock. The key is interest rates. Higher interest rates in 1989 imply lower housing starts by the end of this year.

Retail sales increased 0.6 percent in January. That rise came despite a fall in auto sales of 0.9 percent for the month. Excluding car purchases, retail sales grew 1.0 percent in January. The January Industrial Production Index increased 0.3 percent from December. That rate of gain was slightly below the 0.5 percent advance in December. Capacity utilization, a measure of industrial production relative to U.S. capacity, remained strong at 84.4 percent, the same level as December 1988. Housing starts increased 8.0 percent in January. The gain came mostly in the northeast section of the country where the weather was mild. Early housing start figures frequently are dominated by weather patterns and are not indicative of the year as a whole.

Personal income zoomed upward 1.8 percent in January. This increase followed a December gain of 0.9 percent. Despite the

Table I
National Indicators

	Annual		Quarterly (SAAR)			
	1987	1988	1988:I	1988:II	1988:III	1988:IV
Real GNP (% change)	3.4	3.8	3.4	3.0	2.5	2.0
Real Consumption (% change)	2.7	2.8	4.5	3.0	3.9	3.5
Housing Starts (millions)	1.6	1.5	1.5	1.5	1.5	1.5
Auto Sales (millions)	10.3	10.6	10.8	10.6	10.6	10.5
Interest Rate (90 day T-bill)	5.8	6.6	5.8	6.2	7.0	7.7
Unemployment Rate (%)	6.2	5.5	5.7	5.5	5.5	5.3
Industrial Production Index (1977=100)	129.8	137.2	134.5	136.0	138.4	139.8
Money Supply, M2 (% change)	6.5	5.1	6.8	7.7	3.7	3.0

NOTE: SAAR — Seasonally adjusted at annual rates

Table II
Employment in Nebraska

	Revised Dec. 1988	Preliminary Jan. 1989	Jan. Change vs. Year Ago
Place of Work			
Nonfarm	705,652	692,785	4.1%
Manufacturing	97,657	97,309	6.0%
Durables	47,449	47,323	5.6%
Nondurables	50,208	49,986	6.3%
Mining	1,498	1,278	-5.8%
Construction	24,796	22,351	10.3%
TCU*	47,121	46,618	8.3%
Trade	183,870	180,312	4.7%
Wholesale	51,053	50,804	5.3%
Retail	132,817	129,508	4.5%
FIRE**	48,586	48,476	3.1%
Services	161,984	160,221	4.6%
Government	140,140	136,220	-0.1%
Place of Residence			
Civilian Labor Force	816,760	810,285	1.8%
Unemployment Rate	3.0%	3.5%	

*Transportation, Communication, and Utilities
**Finance, Insurance, and Real Estate

Source: Nebraska Department of Labor

Table III
Price Indices

	Jan. 1989	Change vs. Year Ago	YTD Change vs. Year Ago
Consumer Price Index - U* (1982-84 = 100)			
All Items	121.1	4.7%	4.7%
Commodities	113.9	4.3%	4.3%
Services	128.9	4.9%	4.9%
Producer Price Index (1982 = 100)			
Finished Goods	111.0	4.5%	4.5%
Intermediate Materials	110.5	6.0%	6.0%
Crude Materials	101.0	8.1%	8.1%
Ag Prices Received (1977 = 100)			
Nebraska	157	17.2%	17.2%
Crops	137	44.2%	44.2%
Livestock	169	5.6%	5.6%
United States	147	12.2%	12.2%
Crops	137	19.1%	19.1%
Livestock	157	6.8%	6.8%

U* = All urban consumers
Source: U.S. Bureau of Labor Statistics

rise, personal spending rose only 0.1 percent. American consumers increased their savings rate. Consumer confidence, as measured by the Conference Board, was at its highest level in 20 years.

In February, the Fed released its projections for 1989. They see real GNP growing between 2.5 and 3.0 percent versus the 2.7 percent experienced in 1988 and consumer price rises between 4.5 and 5.0 percent. The 1988 increase was 4.3 percent. They project that M2, a commonly used measure of money supply, will gain between 3.0 and 7.0 percent. All the Fed's figures are fourth quarter to fourth quarter percent changes.

Nebraska Outlook

The Nebraska economy continues to be healthy. In January, Nebraska's unemployment rate stood at 3.5 percent, down from last year and down from December. The Nebraska unemployment rate is nearly two points lower than the January U.S. rate of 5.4 percent. Total employment in Nebraska in January increased 2.9 percent versus a year ago.

Building activity was strong in November, up 12.5 percent versus a year ago. Nebraska is sharing in nationwide growth of fourth quarter construction figures.

Retail sales in November continued their see-saw pattern. November was up 1.1 percent from a year ago. Most of the strength in November retail sales was in motor vehicle sales. In real terms, motor vehicle sales were up 18.2 percent versus a year ago. That increase contrasts with the 8.0 percent increase for the U.S. (on a unit count basis). November was 3.3 percent above year ago totals. On a national basis, October was the low point in the year for auto sales. If national figures are indicators, December will be a strong month for Nebraska motor vehicle sales when they are reported.

Net taxable retail sales in Nebraska have been strong throughout 1988. On a year to date basis, Nebraska was 10.5 percent ahead of 1987 levels through November. The patterns were mixed for the metro areas. Omaha region sales advanced 8.2 percent on a year to date basis, while the Lincoln area advanced 12.2 percent and South Sioux City 16.2 percent. Most regions in the state shared in the advances in retail sales.

John S. Austin

Table IV
City Business Indicators
November 1988 Percent Change from Year Ago

The State and Its Trading Centers	Employment (1)	Building Activity (2)
NEBRASKA	2.9%	15.5%
Alliance	1.3%	391.0%
Beatrice	-0.3%	113.0%
Bellevue	4.9%	38.2%
Blair	4.9%	63.6%
Broken Bow	-1.9%	-57.8%
Chadron	3.6%	-69.6%
Columbus	8.4%	15.7%
Fairbury	-0.6%	982.8%
Falls City	-1.8%	260.4%
Fremont	0.8%	-1.9%
Grand Island	0.3%	36.3%
Hastings	-0.8%	-11.4%
Holdrege	-1.4%	-83.0%
Kearney	-0.3%	27.3%
Lexington	-0.4%	12.8%
Lincoln	4.2%	10.3%
McCook	0.1%	10.6%
Nebraska City	-1.1%	37.1%
Norfolk	0.8%	-40.4%
North Platte	0.9%	15.0%
Omaha	4.9%	15.1%
Scottsbluff/Gering	-0.2%	69.4%
Seward	-1.2%	22.4%
Sidney	0.0%	59.8%
South Sioux City	7.3%	657.2%
York	-1.4%	-48.7%

(1)As a proxy for city employment, total employment (labor force basis) for the county in which a city is located is used.

(2)Building activity is the value of building permits issued as a spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Cost Index is used to adjust construction activity for price changes.

Sources: Nebraska Department of Labor and reports from private and public agencies.

Figure I
City Business Index
November 1988 Percent Change from Year Ago

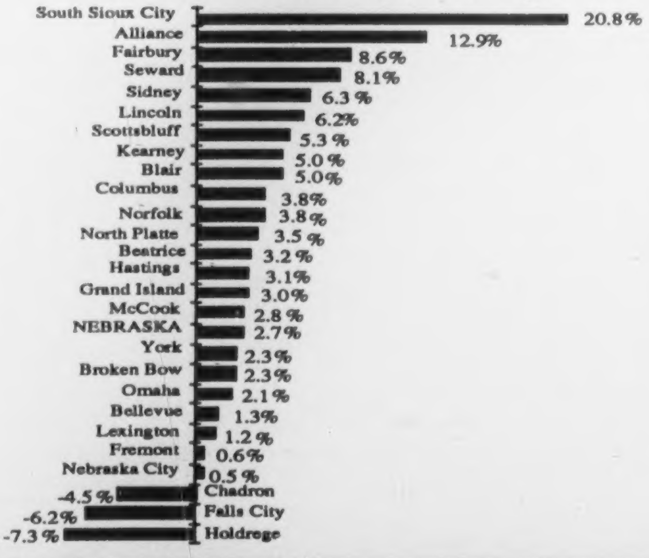
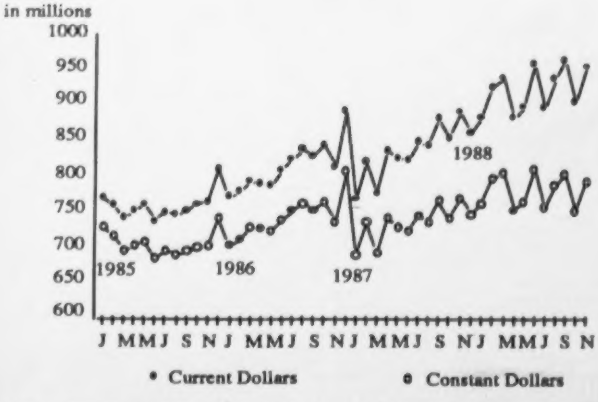


Table V
Net Taxable Retail Sales of Nebraska Regions and Cities

Region Number and City (1)	City Sales (2) Nov. 1988 (000s)	City Sales (2) % Change vs. Year Ago	Region Sales (2) Nov. 1988 (000s)	Region Sales (2) % Change vs. Year Ago	YTD % Change vs. Year Ago
NEBRASKA	$811,153	5.4	$922,989	7.2	10.5
1 Omaha	277,513	2.0	340,487	3.6	8.2
Bellevue	12,726	-2.0	*	*	*
Blair	4,152	4.6	*	*	*
2 Lincoln	114,093	12.6	129,236	14.5	11.2
3 South Sioux City	4,260	21.8	5,848	14.2	16.2
4 Nebraska City	3,701	2.5	15,418	3.7	6.9
6 Fremont	14,501	4.5	27,281	9.9	10.8
West Point	2,470	11.9	*	*	*
7 Falls City	2,000	-23.4	8,445	-1,3	4.0
8 Seward	4,061	21.6	13,872	9.5	10.5
York	6,797	18.1	15,159	17.2	11.3
10 Columbus	13,955	2.1	25,150	4.7	12.9
11 Norfolk	19,815	17.5	33,598	16.4	15.7
Wayne	2,429	5.9	*	*	*
12 Grand Island	32,028	7.0	43,995	8.8	13.8
13 Hastings	14,768	13.2	23,437	11.9	9.6
14 Beatrice	7,626	2.9	16,608	5.2	7.4
Fairbury	2,620	-2.6	*	*	*
15 Kearney	17,854	12.9	24,796	13.6	17.5
16 Lexington	5,149	5.5	14,315	14.3	16.8
17 Holdrege	4,047	8.0	7,900	24.5	9.8
18 North Platte	14,210	9.3	17,885	11.6	14.5
19 Ogallala	4,830	11.2	10,242	18.5	13.2
20 McCook	7,545	9.0	10,726	11.6	13.6
21 Sidney	3,581	13.0	7,487	9.7	8.3
Kimball	1,598	-5.9	*	*	*
22 Scottsbluff/Gering	16,778	10.1	23,437	13.9	7.2
23 Alliance	5,062	14.5	13,598	11.7	10.4
Chadron	2,553	2.9	*	*	*
24 O'Neill	3,930	10.9	13,053	15.1	13.9
Valentine	2,431	19.0	*	*	*
25 Hartington	1,259	4.0	7,174	1.9	5.9
26 Broken Bow	3,351	20.8	11,383	20.6	18.3

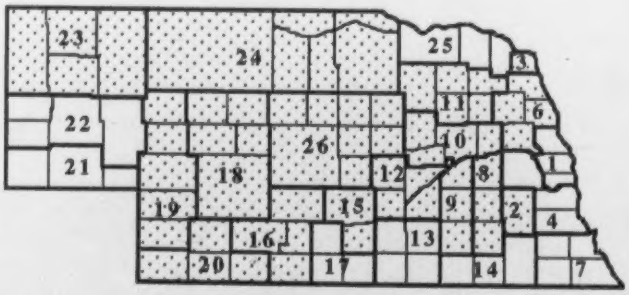
(1) See region map.
(2) Sales on which sales taxes are collected by retailers located in the state. Region totals include motor vehicle sales.
* Within an already designated region.
Compiled from data provided by the Nebraska Department of Revenue

Figure II
Nebraska Net Taxable Retail Sales
(Seasonally Adjusted)



(1) The Consumer Price Index (1982-84 = 100) is used to deflate current dollars into constant dollars

Figure III
Region Sales Pattern
YTD as Percent Change from Year Ago



Shaded areas are those with sales gains above the state average. See Table V for corresponding regions and cities.

BBR Scoreboard

Percent change from same month one year ago

	State	Metro+	Nonmetro
Motor Vehicle Sales (Nov.) Constant $	↑ 18.2%	↑ 19.3%	↑ 17.4%
Nonmotor Vehicle Sales (Nov.) Constant $	↑ 1.1%	↑ 0.4%	↑ 1.8%
Building Activity (Nov.) Constant $	↑ 12.7%	↑ 11.6%	↑ 14.3%
Employment (Jan.)	↑ 2.9%	↑ 4.5%	↑ 1.3%
Unemployment Rate* (Jan.)	↓ 3.5%	↓ 3.1%	↓ 3.9%

+Omaha and Lincoln
*Unemployment is this month's rate, not a percent change from year ago

Looking for the Latest in Research?

AUBER Bibliography Is Available Now

The Bureau of Business Research at the University of Nebraska-Lincoln is among 96 institutions nationwide whose publications are indexed in *University Research in Business and Economics.* This internationally recognized bibliography is sponsored by AUBER, the Association for University Business and Economic Research. AUBER, which represents colleges and universities throughout the country, was founded in 1947 in order to further basic and applied research in business and economics.

University Research in Business and Economics (also known as the *AUBER Bibliography*) has been published annually since 1956 in an effort to make the research of member institutions available to researchers and business persons throughout the United States and around the world. It indexes books, journal articles, monographs, working papers, newsletters, bulletins, and special publications. Among the topics covered are economic growth and development, financial markets, business and industrial location, human capital, labor markets, and regional economics.

Copies are available for $25.00 from the Bureau of Business Research at West Virginia University, P.O. Box 6025, Morgantown, West Virginia 26506-6025. Checks should be made payable to the WVU Foundation.

Inside This Issue....

Nebraska Exports 1
County of the Month 5
Nebraska Highways............................ 7
Review and Outlook 8

Business in Nebraska

PREPARED BY BUREAU OF BUSINESS RESEARCH
Association for University Business & Economic Research

Business in Nebraska is issued as a public service and mailed free of charge upon request to 200 CBA, University of Nebraska-Lincoln, Lincoln, NE 68588-0406. Copyright 1989 by Bureau of Business Research, University of Nebraska-Lincoln.

March 1989, Volume 44 No. 534

University of Nebraska-Lincoln-- Martin Massengale, *Chancellor*
College of Business Administration--Gary Schwendiman, *Dean*

Bureau of Business Research
F. Charles Lamphear, *Interim Director*
James R. Schmidt, *Acting Associate Director*
Merlin W. Erickson, *Research Associate*
Margo Young, *Editorial Assistant*
John S. Austin, *Statistical Coordinator*
David D. DeFruiter, *Statistical Technician*

The University of Nebraska-Lincoln does not discriminate in its academic, admission, or employment programs and abides by all federal regulations pertaining to same.

Non-Profit Org.
U. S. Postage
PAID
Lincoln, Nebraska
Permit No. 46

CONGRESSIONAL INFO SERVIC270238
* SRI BR
* 4520 EAST-WEST HWY
* BETHESDA, MD 20814

U7860-1
5/3/89

Business In Nebraska

April 1989
Vol. 44 No. 535

Prepared by the Bureau of Business Research
200 College of Business Administration
University of Nebraska-Lincoln
Lincoln, NE 68588-0406
402/472-2334

The National Debt and the Federal Deficit

John S. Austin
Statistical Coordinator, Bureau of Business Research

Considerable national attention has focused on the federal deficit. This paper examines issues behind the deficit, specifically the size and importance of the national debt.

Even in relative size, the national debt has grown in recent years. The interest payment on the debt is a substantial drain on federal expenditures. Foreigners own a much larger share of the federal debt than in the past; hence, some interest payments now are going overseas that formerly would have recirculated within the U.S. economy. The national debt problem is mirrored in American society—there is an economy-wide tendency to incur debt. Growth in private debt in recent years has been rapid.

The primary focus of this article is the national debt, not the deficit. The press has reported in depth the size of the deficit and government's attempts to reduce it. Even a zero deficit does not mean that the federal debt has disappeared—it means only that the debt has stopped growing. The problem with the deficit is that federal debt continues to grow. Focusing on the size of the deficit may shift attention from whether or not the national debt is growing in proportion to the economy.

Data often are reported on the federal government's fiscal year basis, from October 1 to September 30. In our tables and figures, we try to note the year basis used. Data on the debt, deficit, and federal expenditures are reported on two separate bases: the Office of Management and Budget (OMB) basis and the National Income and Product Account basis. The differences for the national debt are not large in historical data, but differences can be relatively large for the deficit.

In discussing reduction of the federal deficit, it is important to note that the Gramm-Rudman-Hollings bill requires that forecast levels of the deficit be reduced. There are no penalties for errors in the forecast. Nevertheless, even formulating the deficit forecast is a political process.

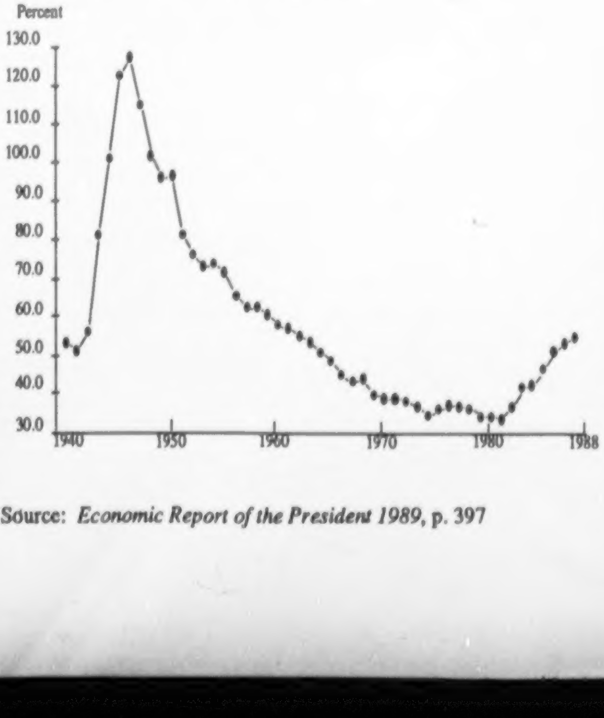
For example, the Bush Administration has been accused of forecasting high growth rates for the national economy, thus showing enough revenue growth to cover foreseen deficits. These charges lack merit. The Council of Economic Advisors (CEA) forecast is high compared to private forecasts, but within reasonable forecast error bounds. Forecasters are not that accurate. For 1988, the CEA was accused of forecasting too much growth in Gross National Product (GNP). Instead, their forecast won the loving cup for accuracy.

Major issues involving the federal debt surfaced in the 1950s and 1960s. At that time, economists were unconcerned about the size of the federal debt. It was an era when the national debt had dropped from high levels at the end of World War II to fairly moderate levels by the early 1960s.

Just how big is the debt? The absolute size of the debt is a meaningless figure. The size of the debt today is substantially bigger than it was at the end of World War II. But the size of our economy is many times larger as well. Meaningful comparison can be made only with a relative measure of the size of the debt. The most commonly used measure of the relative size of the debt is the ratio of the federal debt to GNP. Figure 1 presents the debt-to-GNP ratio from 1940 to the present.

In fiscal year 1941, the debt-to-GNP ratio was 50.9 percent. By the end of the war, the debt-to-GNP ratio was 127.3 percent. Essentially, we paid for the war by reducing current consumption

Figure 1
Ratio of Federal Debt to Gross National Product



Source: *Economic Report of the President 1989*, p. 397

Table 1
Federal Government Deficit, Debt, and Expenditures
($ Billion)

Fiscal Year	Deficit (Surplus+)	Total Debt	GNP	Ratio Debt-GNP	Net Interest Paid	Total Expenditures	Ratio Net Interest-Total Expenditures
1946	-15.9	271.0	212.9	127.3%	3.7	55.5	6.7%
1950	-3.1	256.9	266.8	96.3	4.4	42.4	10.4
1960	+0.3	290.9	506.7	57.4	7.0	91.3	7.7
1970	-2.8	380.9	990.2	38.5	13.5	198.7	6.8
1980	-73.8	908.5	2670.6	34.0	50.8	589.0	8.6
1988	-155.1	2600.8	4780.0	54.4	150.4	1106.3	13.6

Source: *Economic Report of the President 1989*

levels through rationing and increasing the national debt. At the time, there was no general opposition to that method of paying for the war. There was a clear national goal of winning the war—whatever financial means necessary were acceptable to the general public.

The relative magnitude of the debt was reduced under Presidents Truman and Eisenhower. The reduction was due to an expanding economy and relatively conservative expenditures. Even during the Korean War the reduction continued. The record under Kennedy and Johnson showed further reductions in the debt despite the Vietnam conflict. President Nixon continued the trend.

The economy expanded so rapidly that the relative debt size continued to decrease. It was a phenomenon of growth in the denominator overwhelming growth in the numerator. In the late 1970s there was some wobbling in the relative debt ratio, but in the early 1980s a new trend emerged.

The huge tax cuts legislated in the early Reagan years were never matched by corresponding spending cuts. As a result, the deficit and the debt grew sharply. One can blame the President, the Congress, or the electorate for this huge increase in the debt. Blame is unimportant from an economic point of view. The critical question is the impact of the increasing debt. The expansion of the debt in the 1980s has brought a return to the debt-to-GNP ratios of the Eisenhower Administration.

The major impact of federal debt is the size of interest payments and how they may affect the federal government budget. Table 1 charts the growth in the size of net interest payments. *Net interest* is defined as gross interest payments less interest payments from the government to itself. The latter consists primarily of payments on government trust funds.

To grasp the importance of interest payments, we must look at their relative size. In this case, we can compare the ratio of interest payments to GNP. We prefer, however, to look at ratios of net interest payments to total federal expenditures (also contained in Table 1). In 1988, the ratio of net interest payments to total federal expenditures was double the level of 1946.

Two things contributed to the increase in the ratio: the substantially higher interest rates (compared to the 1940s) and the recent growth in the size of the debt. Growth in the relative size of interest payments limits maneuvering room in the federal budget. Any political restrictions on the list of items that can be cut means a greater burden on those items that can be cut.

Who holds the debt? An old argument is that the federal government debt is no cause for alarm because interest payments on the debt go from ourselves to ourselves. That statement may have been partially true in the 1950s when virtually no debt was paid to foreigners. Table 2 shows, however, that interest payments to foreigners now amount to 17.6 percent of interest payments. In addition, interest payments are not made from one group of citizens to itself. There is a redistribution effect—the payment is from one group of taxpayers to another.

A common response to fears about the burgeoning national debt is that government is imitating debt growth in the private sector. Table 3 presents private debt for various components. In 1970, the relative size of nonfinancial private debt was nearly equal to that of GNP. By 1988:III, the ratio had grown to 128.0 percent. More alarming are changes in the private financial sector debt. In 1970, the ratio of private financial debt to GNP was 11.9 percent. That figure swelled to 42.2 percent by 1988:III. The ratio of total debt (all sectors) to GNP was 230.1 percent in 1988:III.

The basic problem is that debt must be repaid. Interest payments are a drain on the federal pocketbook or the private pocketbook. The private sector has the added burden of amortization. Furthermore, the relative size of interest payments likely will vary as interest rates change.

The growth of leveraged buyouts (LBOs) may pose a new problem on the U.S. debt scene. Data sources are not current enough to provide evidence on LBO trends. The threat is that converting corporate equity into corporate debt reduces the ability of major leveraged corporations to withstand downturns in the economy.

Table 2
Interest Paid to Foreigners

Year	Net Interest Paid	Paid to Foreigners	Percent Paid to Foreigners
1946	3.9	0	0
1950	4.4	0	0
1960	6.8	.3	4.4
1970	14.1	1.0	7.1
1980	53.3	12.6	23.6
1988*	151.3	26.7	17.6

* Fiscal year 1988 used
Source: *Survey of Current Business*

Table 3
Credit Market Debt Owned by Sector
($ Billion)

Calendar Year	Private Domestic Nonfinancial	Private Financial Institutions	All Sectors	GNP	Ratio Nonfinancial -GNP	Ratio Private Financial-GNP	Ratio All Sectors-GNP
1970	981.9	120.4	1604.0	1015.5	96.7%	11.9%	158.0%
1980	2887.7	563.0	4684.6	2732.0	105.7	20.6	171.5
1987	5787.4	1862.6	10408.1	4526.7	127.8	40.4	229.9
1988:III	6175.0	2035.7	11100.8	4823.8	128.0	42.2	230.1

Source: Federal Reserve Board, *Flow of Funds*. The all sectors category includes government debt and foreign debt. Private domestic nonfinancial excludes state and local government in these data

The Fruehauf Corporation iillustrates this point. Three years ago, Fruehauf went private in a $1.4 billion dollar LBO. At the time, many analysts questioned the wisdom of imposing such a heavy debt on a highly cyclical business. At the end of March 1989, Fruehauf announced it was selling its premier tractor trailer business. This leaves the company with only one major business unit, which is also for sale.

The ability of LBO firms to weather the next recession may lead to a fundamental change of government policy on corporate takeovers.

A Look at the Future of the Nebraska Employment Picture

The Nebraska Wage Parity Gap

Nebraska has been and likely will continue to be a state with relatively low wage rates. The *wage rate* is defined as total annual wages and salaries paid by an industry divided by the average annual number of jobs in the industry. Table 1 contains the ratios of Nebraska wage rates to those of the U. S. by industry from 1969, 1979, and 1988. These ratios are termed *parity ratios*.

Nebraska wage rates were below U.S. levels in 1969 and lost ground in several industries between 1969 and 1979. With one exception, all parity ratios fell between 1979 and 1988. Transportation, communication, and utilities (TCU) wage rates exceeded those of the U.S. in 1979, and the parity ratio has increased over the last two decades.

The exceptional performance of TCU wage rates is related to the relatively large proportion of railroad workers in Nebraska. These workers are unionized and well paid. Unfortunately, employment trends in railroads have been downward because of the increased competition brought by deregulation.

The TCU ratio is counterbalanced by an eroding parity ratio in nondurables manufacturing. In 1969, the Nebraska wage rate in nondurables exceeded that of the U.S. It since has fallen below the U.S. level.

The federal government and durables manufacturing industries had parity ratios that grew between 1969 and 1979, fell between 1979 and 1988, but were above 1969 levels in 1988. Given the absence of a major federal regional center, it is unlikely that Nebraska's parity ratio in the federal government industry will move significantly upward in the future.

The lack of parity in the durables manufacturing area relates to the lack of highly paid industry jobs such as those in auto and aircraft manufacturing. Nebraska's durables manufacturing is oriented toward light industry.

The parity ratios for the remaining industries have decreased in both the 1969-1979 and 1979-1988 time spans. Especially disturbing is the pattern shown by the three largest industries in terms of jobs: retail trade, services, and state and local government. These industries accounted for 58.8 percent of Nebraska's nonfarm wage and salary jobs in 1988. Their wage parity ratios are in the low 80.0 percent range.

The impact of low wages has helped to keep the ratio of Nebraska to U.S. per capita personal income in the low 90.0 percent range in recent years. Nebraska's cost of living is in approximately the same range. A large factor in keeping Nebraska living costs down is the relatively low cost of housing. Even though wage rates are low, the purchasing power of Nebraskans is in line with national standards.

Detailing the causes of Nebraska's low relative wages is beyond the scope of this article, but a few comments can be offered. First, the wages paid in Nebraska are not determined solely by state labor markets. Wages may be influenced by broader national or regional markets.

Second, Nebraskans may not be underpaid for what they do, but our jobs may be at the low wage end of the industries. For example, among the highest paid food and beverage workers are those who work in breweries. Nebraska's only remaining brewery closed a few years ago. Construction wages differ depending on the type of construction work. Because of federal government contracting provisions, highway workers are paid on a union scale. Residential construction workers in Nebraska are typically non-union and paid substantially less than highway construction workers. In services, Nebraska is well represented in relatively low wage watts line operations and underrepresented in the high wage accounting services.

Is there a cure for Nebraska's low wage status? One approach would be to allow tax credits only for high wage-paying employers. This solution is too simplistic. There always will be a number of Nebraskans whose skills fit into low wage jobs.

Table 1
Ratios (Percent) of Nebraska to U.S.
Average Annual Wage Rates

	1969	1979	1988	1988 Employment Distribution
Mining	81.4	72.5	67.7	0.2
Construction	100.0	95.0	89.0	3.6
Manufacturing				
Durables	82.1	84.2	83.6	6.8
Nondurables	101.0	98.3	92.3	7.0
TCU	95.9	100.7	104.7	6.5
Trade				
Wholesale	91.6	87.1	80.0	7.2
Retail	90.8	90.3	82.8	18.4
FIRE	89.6	91.4	81.2	7.2
Services	94.9	90.8	82.0	22.4
Fed. Govt	87.9	95.5	90.1	2.6
State and and Local Govt	90.2	85.6	81.4	18.0

FIRE = Finance, insurance, and real estate; TCU = transportation, communication, and utilities

If Nebraska is headed for an era of relative labor scarcity, will wages rise rapidly in certain low skill areas, and will employers move to some other low wage area? To the extent that low wage jobs may be labor intensive and require a low capital commitment, such industries may be highly mobile. In growth terms, however, the chances of attracting additional low wage employers will diminish if the state's relative wages for those jobs rise. Nebraska should be discriminating in the industries the state tries to attract. Industries that fit certain criteria can be targeted for promotion.

The prospect of an inadequate supply of persons to fill jobs leads to an interesting possibility. Consider the following case scenario. Assume that the Bureau of the Census is correct in its projection and Nebraska's population decreases in the next ten years. Then we should question whether to attract more low wage jobs. If Nebraska were at full employment and were to attract a low wage firm into the state, it likely would fill its employment needs with out-of-state persons. If this firm has out-of-state administrative headquarters, the profits accruing from the enterprise would flow from Nebraska. The direct benefits to the state's economy would be limited to the purchases of materials and other costs of doing business that involved Nebraska firms. In this hypothetical case, the benefit of additional employment would be minimal.

A seemingly simple solution to the low wage problem is to create more jobs for the pool of educated, highly trainable individuals who enroll in the state's colleges, universities, and technical schools. Nebraska is a leader in educating its young citizens. It is no mystery why out-of-state companies enjoy recruiting in Nebraska. A problem is to create jobs within the state that are of interest to larger numbers of these individuals.

One idea may be to refocus targeting efforts toward employers who will increase their employment of new graduates. If necessary, a restructuring of the tax credit system might be considered. In addition to favoring recent graduates, such a program could help draw previous graduates and their peers into the state.

Nebraska should not try to build a new Silicon Valley. Instead, Nebraska should increase its strength in directions natural for the talents and resources of the state. One example of how Nebraska industry could meet future challenges is presented in F. Charles Lamphear's article in the February issue of *Business in Nebraska*. Another example would be to expand Nebraska's services industry. The focus should not be on expanding current low wage activities, but to expand in high wage areas where Nebraska is underrepresented (such as professional services, including accounting services, engineering consulting, architectural work, and legal consulting).

It is unlikely that Nebraskans are interested in the rapid expansion such as that of some of the Sun Belt states. Such expansion requires not only major infusions of private capital, but of public capital as well. The latter would need to be supported by the taxpayers. Furthermore, it has not been unusual for these rapidly expanding communities to be characterized by volatile economies. Their expansion has been associated with a handful of critical industries. When one of those industries sneezes, the whole economy catches a cold. Instead, Nebraska can take advantage of existing resources and maximize the benefits from them.

John S. Austin

Review and Outlook

National Economy

Inflation again grabbed the business news headlines in March. The Producer Price Index (PPI) for February increased 1.0 percent, and the stock market fell sharply. The increase followed a gain of the same size in January. There was widespread speculation that inflation was headed toward double digit levels.

Tomato prices rose 158 percent in February because of a frost in Mexico, accounting for approximately half of the 1.2 percent rise in the food component of the PPI. Even without tomato inflation, the PPI advance would have been substantial. The PPI contained mixed results. Crude prices decreased in February, but remained 7.4 percent ahead of year ago levels.

The bad news on producer prices was offset by the Consumer Price Index (CPI). Consumer prices increased a moderate 0.4 percent in February. That low rate of growth surprised many analysts, as most had expected growth above 0.5 percent. The CPI in February, while showing a modest change from the month before, had increased 4.8 percent from year previous levels. For the year as a whole, 1988 consumer prices increased 4.1 percent. Thus, the February figures show a heightened level of consumer price inflation.

February reports on wages were reassuring. Average hourly wages were down slightly in February. Union wage increases for 1988 as a whole were moderate.

Energy prices tend to be volatile. The recent oil spill in Alaska was blamed for a short-term jump in oil prices. Gasoline prices have been creeping upward. In Nebraska last summer, regular gasoline prices in Omaha were 78.9 cents per gallon. Omaha gas prices have increased to around a dollar per gallon.

The food component of prices is also volatile. Fruit prices have increased dramatically because of difficulties in Chile and growing concern over pesticide use. Some supermarkets have begun to label the origin of their fruit.

Signals were mixed in the economic news released in March. Industrial production was flat in February. Capacity utilization was down marginally. Housing starts in February were off 11.4 percent from January. Auto sales were varied in early March and were slightly above year ago levels in mid-March. Retail sales in February decreased 0.4 percent.

On the up side, consumer confidence has remained high. New highs for consumer confidence measures were reached in January and continued in February. Consumption in February increased 0.5 percent. Most of that gain was in the consumption of services and durable goods. Personal income gained 1.0 percent. Farm payments were a major part of the gain. The savings rate rose in February to 5.9 percent. Unemployment fell to 5.1 percent.

Nebraska Economy

Retail sales in Nebraska were strong in 1988. For the year as a whole, Nebraska net taxable retail sales expanded 10.8 percent. That increase was led by motor vehicle sales 18.7 percent ahead of 1987 levels. Nonmotor vehicle sales expanded 9.8 percent.

The metropolitan areas were divided in their gains. Lancaster County advanced 11.3 percent for the year, while the Omaha region expanded 9.0 percent. Many of the outlying areas had growth rates exceeding the state average. None of the state regions showed a decrease for the year as a whole (Table V). The increase in retail sales came from employment and personal income. Farm income was the leader in the latter. Increases in farm income can be linked to government payments received early in the year and higher farm prices brought by last year's drought.

There has been a change in the order of City Business Index (CBI). South Sioux City reached the top of the list, replacing the long dominant Fairbury. South Sioux City's advance is largely attributable to increases in building activity, specifically an expansion into oat milling. Fairbury's building involves the construction of a new hospital. Although its building activity is strong, Fairbury's employment levels have been falling. Three of the top four cities in the CBI have major construction projects under way.

Table I
National Indicators

	Annual		Quarterly (SAAR)			
	1987	1988	1988:I	1988:II	1988:III	1988:IV
Real GNP (% change)	3.4	3.9	3.4	3.0	2.5	2.4
Real Consumption (% change)	2.7	2.8	4.5	3.0	3.9	3.5
Housing Starts (millions)	1.6	1.5	1.5	1.5	1.5	1.5
Auto Sales (millions)	10.3	10.6	10.8	10.6	10.6	10.5
Interest Rate (90 day T-bill)	5.8	6.7	5.8	6.2	7.0	7.7
Unemployment Rate (%)	6.2	5.5	5.7	5.5	5.5	5.3
Industrial Production Index (1977=100)	129.8	137.2	134.5	136.0	138.4	139.8
Money Supply, M2 (% change)	6.5	5.1	6.8	7.7	3.7	3.0

NOTE: SAAR — Seasonally adjusted at annual rates

Table II
Employment In Nebraska

	Revised Jan. 1989	Preliminary Feb. 1989	Feb. % Change vs. Year Ago
Place of Work			
Nonfarm	693,241	697,292	4.3%
Manufacturing	97,216	97,334	6.4%
Durables	47,330	47,309	5.6%
Nondurables	49,886	50,025	7.2%
Mining	1,291	1,268	-9.6%
Construction	22,674	22,077	9.9%
TCU*	46,705	46,503	7.8%
Trade	180,442	179,806	4.8%
Wholesale	50,916	51,111	5.7%
Retail	129,526	128,695	4.4%
FIRE**	48,526	48,493	2.8%
Services	160,123	161,814	4.3%
Government	136,264	139,997	1.0%
Place of Residence			
Civilian Labor Force	810,523	803,488	0.6%
Unemployment Rate	3.5%	3.1%	

*Transportation, Communication, and Utilities
**Finance, Insurance, and Real Estate

Source: Nebraska Department of Labor

Table III
Price Indices

	Feb. 1989	% Change vs. Year Ago	YTD % Change vs. Year Ago
Consumer Price Index - U* (1982-84 = 100)			
All Items	121.6	4.8%	4.7%
Commodities	114.3	4.8%	4.5%
Services	129.4	4.9%	4.9%
Producer Price Index (1982 = 100)			
Finished Goods	111.7	5.5%	5.0%
Intermediate Materials	110.9	6.5%	6.3%
Crude Materials	101.0	6.8%	7.4%
Ag Prices Received (1977 = 100)			
Nebraska	159	14.4%	17.2%
Crops	137	41.2%	45.3%
Livestock	173	4.2%	6.4%
United States	148	13.8%	13.8%
Crops	138	26.6%	24.1%
Livestock	157	5.4%	6.4%

U* = All urban consumers
Source: U.S. Bureau of Labor Statistics

The state's unemployment rate in February was 3.1 percent, well below the 5.1 percent of the nation .

A recent newspaper article reported that Nebraska's business climate was rated substantially below average by an East Coast consulting service. Apparently no one at the consulting firm was aware of the existence of Nebraska's LB 775. Nebraska may be suffering from a stereotyped view of Plains states. We have been accused of having too narrow an industrial base, reflecting the idea that agriculture dominates our economy. We strongly suspect that the scope of our service; financial, insurance, and real estate; and wholesale and retail trade industries remains unappreciated by many.

It is not unreasonable to suggest that we should diversify from agriculture, but Nebraska's future always will be strongly tied to agriculture. For example, food is a major component of the nondurable manufacturing sector in Nebraska. We should not be surprised that a major agricultural state is a major producer of food products. No one is suggesting that Nebraska give their food manufacturing industry to any other state. Although it may be desirable to enter other areas, expansion of what you do best is certainly one way for a state to grow.

John S. Austin

Nebraska Business Shorts

Nebraska Nonfuel Mineral Production Grows

The estimated value of nonfuel mineral production in Nebraska in 1988 was $94 million according to the U.S. Bureau of Mines. As reported in the *Mineral Industry Survey*, this is an increase of about 5 percent over 1987 and is due to increased sales of crushed stone, masonry cement, and clays. Most of these products were used in construction. Nebraska ranked 43rd in the nation in production of nonfuel minerals.

Merlin W. Erickson

Table IV
City Business Indicators
December 1988 Percent Change from Year Ago

The State and Its Trading Centers	Employment (1)	Building Activity (2)
NEBRASKA	2.1%	21.3%
Alliance	1.7%	339.9%
Beatrice	2.8%	96.5%
Bellevue	6.3%	39.4%
Blair	4.8%	121.8%
Broken Bow	0.1%	-49.4%
Chadron	-0.1%	-62.5%
Columbus	16.4%	86.9%
Fairbury	-1.3%	1,090.0%
Falls City	-3.3%	231.2%
Fremont	-0.8%	4.3%
Grand Island	2.8%	44.5%
Hastings	6.0%	-14.1%
Holdrege	0.5%	-87.1%
Kearney	2.8%	19.8%
Lexington	1.9%	31.5%
Lincoln	6.7%	5.2%
McCook	0.9%	-19.7%
Nebraska City	0.8%	68.0%
Norfolk	4.1%	-28.4%
North Platte	0.0%	33.7%
Omaha	5.1%	25.2%
Scottsbluff/Gering	0.7%	31.4%
Seward	-4.7%	19.1%
Sidney	5.6%	40.5%
South Sioux City	2.9%	599.6%
York	-0.5%	-53.1%

(1)As a proxy for city employment, total employment (labor force basis) for the county in which a city is located is used

(2)Building activity is the value of building permits issued as a spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Cost Index is used to adjust construction activity for price changes

Sources: Nebraska Department of Labor and reports from private and public agencies

Figure I
City Business Index
December 1988 Percent Change from Year Ago

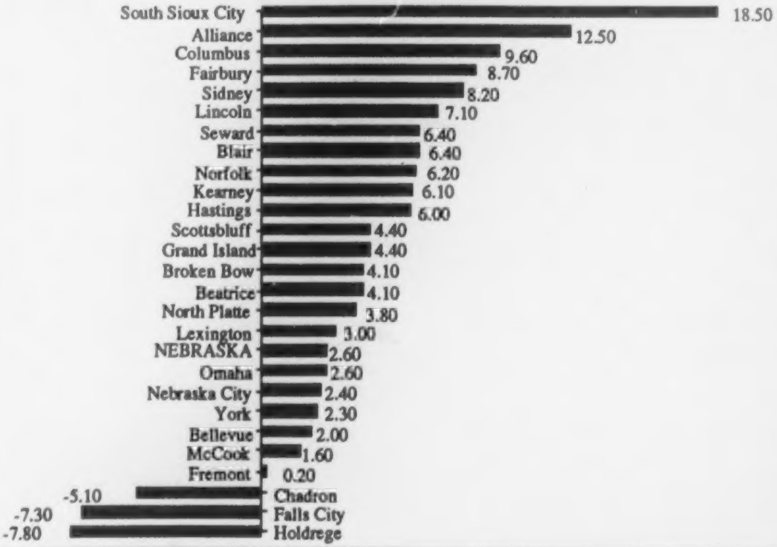
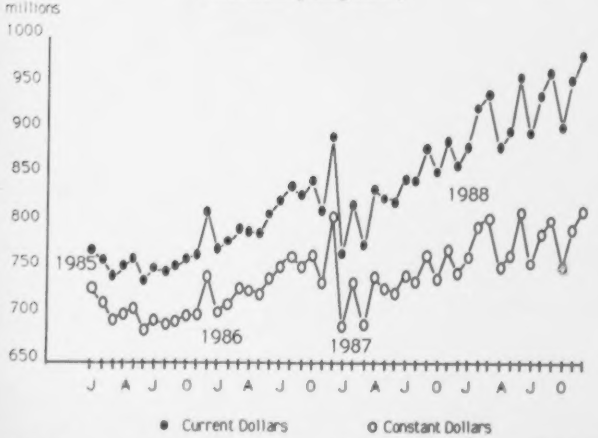


Table V
Net Taxable Retail Sales of Nebraska Regions and Cities

Region Number and City (1)	City Sales (2) Dec. 1988 (000s)	City Sales (2) % Change vs. Year Ago	Region Sales (2) Dec. 1988 (000s)	Region Sales (2) % Change vs. Year Ago	YTD % Change vs. Year Ago
NEBRASKA	$1,074,232	13.7	$1,182,313	13.8	10.8
1 Omaha	377,170	16.3	452,718	15.5	9.0
Bellevue	19,334	12.2	*	*	*
Blair	5,233	11.9	*	*	*
2 Lincoln	141,416	12.6	156,031	12.5	11.3
3 South Sioux City	4,560	7.7	6,225	2.6	14.9
4 Nebraska City	4,616	1.7	19,096	5.6	6.9
6 Fremont	19,126	9.4	33,679	7.1	10.4
West Point	3,125	4.1	*	*	*
7 Falls City	2,732	0.1	10,626	5.3	4.1
8 Seward	5,311	11.8	17,290	11.4	10.6
York	8,552	9.0	18,512	14.4	11.6
10 Columbus	18,834	9.9	31,592	9.8	12.6
11 Norfolk	24,370	11.9	41,187	11.7	15.2
Wayne	3,091	-5.4	*	*	*
12 Grand Island	42,441	13.7	56,568	14.0	13.8
13 Hastings	20,831	15.4	30,905	12.5	9.9
14 Beatrice	10,111	7.9	21,760	10.5	7.7
Fairbury	3,451	5.9	*	*	*
15 Kearney	23,933	13.5	32,171	14.3	17.1
16 Lexington	7,560	14.8	18,933	17.9	16.9
17 Holdredge	5,014	9.7	8,963	14.1	10.2
18 North Platte	19,538	12.1	23,672	14.3	14.5
19 Ogallala	5,871	12.9	12,104	23.1	14.1
20 McCook	10,113	11.5	13,888	9.6	13.1
21 Sidney	4,730	3.3	8,899	3.6	7.8
Kimball	1,843	-3.4	*	*	*
22 Scottsbluff/Gering	23,543	16.3	30,515	15.6	8.1
23 Alliance	6,343	4.3	16,970	14.2	10.8
Chadron	3,363	6.3	*	*	*
24 O'Neill	5,206	7.9	16,377	11.6	13.6
Valentine	2,972	8.3	*	*	*
25 Hartington	1,593	-16.1	9,490	4.4	5.8
26 Broken Bow	3,880	11.8	13,598	14.5	17.9

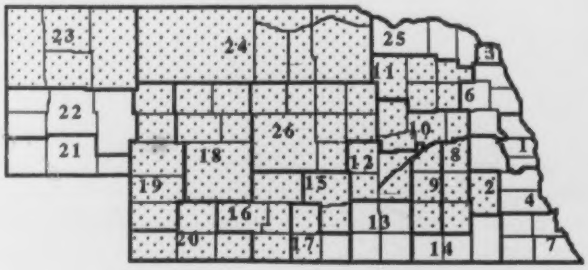
(1) See region map.
(2) Sales on which sales taxes are collected by retailers located in the state. Region totals include motor vehicle sales.
* Within an already designated region
Compiled from data provided by the Nebraska Department of Revenue

Figure II
Nebraska Net Taxable Retail Sales
(Seasonally Adjusted)



(1) The Consumer Price Index (1982-84 = 100) is used to deflate current dollars into constant dollars

Figure III
Region Sales Pattern
YTD as Percent Change from Year Ago



Shaded areas are those with sales gains above the state average. See Table V for corresponding regions and cities

Scoreboard

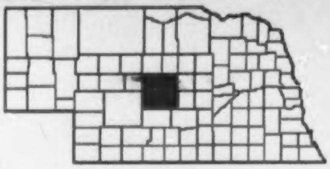
Percent change from same month one year ago

	State	Metro+	Nonmetro
Motor Vehicle Sales (Dec.) Constant $	↑ 10.0%	↑ 7.6%	↑ 12.0%
Nonmotor Vehicle Sales (Dec.) Constant $	↑ 8.9%	↑ 10.1%	↑ 7.7%
Building Activity (Dec.) Constant $	↑ 18.8%	↑ 15.5%	↑ 23.6%
Employment (Feb.)	↑ 1.9%	↑ 2.1%	↑ 1.7%
Unemployment Rate* (Feb.)	↓ 3.1%	↓ 2.9%	↓ 3.3%

+Omaha and Lincoln

*Unemployment is this month's rate, not a percent change from year ago

County of the Month



Custer

Size of county: 2,562 square miles, ranks 3rd in the state

Population: 13,000 (estimated) in 1987, a change of -6.3 percent from 1980

Median age: 35.8 years in Custer County, 29.7 years in Nebraska in 1980

Per capita personal income: $13,238 in 1986, ranks 37th in the state

Unemployment rate: 4.3 percent in Custer County, 4.9 percent in Nebraska for 1987

Net taxable retail sales ($000): $52,799 in 1987, a change of +1.0 percent from 1986; $62,846 during January-December 1988, a change of +19.0 percent from the same period one year ago

Number of business and service establishments: 348 in 1986; 71.6 percent had less than five employees

Nonfarm employment (1987):

	State	Custer County
Wage & salary workers	659,223	3,221
	(percent of total)	
Manufacturing	13.3%	12.3%
Construction and Mining	3.9	3.1
TCU	6.5	3.6
Retail Trade	18.7	20.6
Wholesale Trade	7.1	9.2
FIRE	7.3	4.5
Services	22.7	17.0
Government	20.5	29.7
Total	100.0%	100.0%

Agriculture:

Number of farms: 1,439 in 1982, 1,463 in 1978

Average farm size: 1,044 acres in 1982

Market value of farm products sold: $124.1 million in 1982 ($86,230 average per farm)

Sources: U.S. Bureau of the Census, U.S. Bureau of Economic Analysis, Nebraska Department of Labor, Nebraska Department of Revenue

Merlin W. Erickson

Business in Nebraska

PREPARED BY BUREAU OF BUSINESS RESEARCH
Association for University Business & Economic Research

Business in Nebraska is issued as a public service and mailed free of charge upon request to 200 CBA, University of Nebraska-Lincoln, Lincoln, NE 68588-0406. Copyright 1989 by Bureau of Business Research, University of Nebraska-Lincoln.

April 1989, Volume 44 No. 535

University of Nebraska-Lincoln-- Martin Massengale, *Chancellor*
College of Business Administration--Gary Schwendiman, *Dean*

Bureau of Business Research
F. Charles Lamphear, *Interim Director*
James R. Schmidt, *Acting Associate Director*
Merlin W. Erickson, *Research Associate*
Margo Young, *Editorial Assistant*
John S. Austin, *Statistical Coordinator*
David D. DeFruiter, *Statistical Technician*

The University of Nebraska-Lincoln does not discriminate in its academic, admission, or employment programs and abides by all federal regulations pertaining to same.

Nonprofit Org.
U. S. Postage
PAID
Lincoln, Nebraska
Permit No. 46

CONGRESSIONAL INFO SERVIC270238
* SRI BR
* 4520 EAST-WEST HWY
* BETHESDA, MD 20814

J2860-1
6/6/89

Business In Nebraska

May 1989
Vol. 44 No. 536

Prepared by the Bureau of Business Research
200 College of Business Administration
University of Nebraska-Lincoln
Lincoln, NE 68588-0406
402/472-2334

Nebraska's Exports of Agricultural Commodities

Andrew Pitcher
Graduate Assistant, UN-L Bureau of Business Research

Introduction

An earlier *Business in Nebraska* article investigated possible export opportunities for Nebraska, with emphasis on the manufacturing sector. This article focuses on the export of agricultural commodities. Actual data are generally not available for individual states due to the pooled nature of agricultural commodity exports. Estimates of Nebraska's share of total U.S. exports of agricultural commodities, however, can be made on the basis of the state's share of U.S. agricultural output by commodity class.

In the early 1970s, agricultural commodity exports played only a minor role in U.S. agriculture. U.S. agricultural exports expanded rapidly in the 1970s and early 1980s. U.S. agricultural exports reached $44 billion in 1981; however, a collapse in world agricultural commodity prices in the 1980s raises questions about the ability of the U.S. to compete in the international market. Because agricultural commodities most basic to trade (feed grains, soybeans, and wheat) are also principal crops in Nebraska, the future of U.S. agricultural commodity exports will have important consequences for the Nebraska economy.

This article reviews recent developments in exports of agricultural commodities and finds that Nebraska agriculture still holds significant competitive advantages and is in a favorable position to continue to contribute substantially to the nation's agricultural exports. A number of challenges face Nebraska agriculture, however. Changes in the customer base for agricultural products and the differing tastes of foreign cultures should be recognized. In addition, a major portion of U.S. trade in agricultural commodities is helped by export assistance programs such as the Export Enhancement Program. Nebraska must be able to use such programs to its advantage while recognizing the need to reduce dependence on subsidies. Finally, given the high level of agricultural imports relative to exports, there may be unexplored possibilities in the domestic economy, particularly in processing agricultural commodities and in the use of surplus feed grains to bolster productivity in the meat sector.

United States Agricultural Exports

The U.S. historically has enjoyed a positive trade balance in agricultural products. Although in recent years the agricultural balance has deteriorated, it still makes a significant positive contribution to the overall trade balance. In contrast, nonagricultural trade has shown a serious deficit since the mid 1970s. While the agricultural balance declined 48 percent between 1981 and 1988 to a positive balance of $14,323 million, the nonagricultural deficit rose 188 percent to $150,128 million over the same period.

Productivity of United States Agriculture

During 1987, U.S. merchandise exports contributed approximately 5 percent of the value of Gross National Product (GNP). Exports of agricultural commodities, after deducting transportation and other costs between farm and export points, were about 15 percent of cash receipts from the U.S. agricultural sector in the 1987 fiscal year (October 1986-September 1987). The exported proportion is much higher for many specific agricultural commodities. In terms of volume, the exported share of U.S. wheat production was 52 percent in the 1987 fiscal year. Exports accounted for 56 percent of the U.S. soybean production over the same period. The percentage of corn exported accounted for 19 percent of U.S. corn production in the 1987 fiscal year. Although corn exports account for a significant proportion of production, the percentage contribution is much lower than in the 1984 fiscal year when 44 percent of U.S. corn production was exported. One notable characteristic of export markets for many U.S. agricultural commodities is the volatility of the U.S. export share. Volatility is due to changes in world demand, reflecting climatic changes and shifts in trade policy, for example.

Although the U.S. was able to expand its share of the world wheat market from one-fifth in 1970 to almost one-half in 1981, its share has declined in recent years, bottoming at one-fourth in 1985. Although the situation now is improving, the decline reflects an increase in international competitiveness combined with a drop in world demand that reduced the market share of more marginal producers. A similar reduction in U.S. market share also has been experienced in the world market for feed grains. In 1979, the U.S. held nearly 80 percent of the world corn market. Its share dropped to between 50 and 60 percent by 1988. Similarly, the U.S. had supplied four-fifths of the world soybean market in the 1970s, but increasing competition from other countries and products resulted in this U.S. falling to as low as two-thirds in 1984.

A recent article by the Federal Reserve Bank of Kansas City discussed the issue of whether agriculture in the U.S. and Plains states can compete in world markets. The article concluded that although production costs for the U.S. principal export crops are not the world's lowest, these costs are competitive with average production costs in most major exporting countries. More importantly, the volume of U.S. exports of these commodities is far greater than the current least cost producer of each commodity. Because U.S. production is spread over a number of states, production costs for a significant proportion of U.S. production may be below costs in competing countries.

Destination of United States Agricultural Exports

Table 1 breaks down the major destinations of U.S. agricultural exports. The major recipient of U.S. agricultural exports in the 1988 fiscal year was Asia, with approximately 45 percent of our agricultural exports going to the region. The major customer in the region was Japan, with almost 21 percent of the value of U.S. agricultural exports. Other major importers of U.S. agricultural commodities for the 1988 fiscal year included the Republic of Korea, Canada, and the U.S.S.R. Closer examination of the statistics reveals that these countries are importing mainly wheat and other grain from the U.S. The imports are hardly surprising, as the U.S. currently supplies approximately 60 percent of the world's demand for coarse grains.

The 1988 statistics shown in Table 1 represent some major shifts from 1987. South Korea was ranked fourth in 1987 in terms of the value of U.S. exports of agricultural commodities. An increase in the value of U.S. agricultural exports to South Korea of nearly one-third resulted in the country rising to the number two position in 1988. The emergence of South Korea as a major importer of U.S. agricultural commodities reflects the country's emergence as a major economic power. The increase also can be attributed in part to a drop in U.S. agricultural commodity prices. The reduction allowed the U.S. to expand its share of South Korea's agricultural imports to 47 percent by 1987.

Nebraska's Exports of Agricultural Commodities

Table 2 shows the value of crop production for Nebraska and the U.S. over the period 1986-1988 (fiscal years). Nebraska consistently made significant contributions to most of the commodity groups. Furthermore, Nebraska's contribution to major U.S. export commodities has risen over the period. For instance, the proportion of Nebraska's corn production to total U.S. production grew from about 11 percent in 1986 to over 16 percent in 1988. Nebraska's contribution to sorghum for grain production showed a similar increase, growing from 13.9 percent in

Table 1
Major Destinations of United States
Agricultural Exports

Region & country	Fiscal Year ($ million) 1987	1988	Change 1987 to 1988	% of Ag Exports (1988)
Western Europe	7,219	8,029	11%	22.72%
European Community	6,787	7,513	11%	21.26%
Germany, Fed. Rep.	1,266	1,306	3%	3.70%
Italy	733	713	-3%	2.02%
Netherlands	1,954	2,087	7%	5.91%
United Kingdom	666	819	23%	2.32%
Spain	658	848	29%	2.40%
USSR	659	1,934	193%	5.47%
Asia	11,990	15,928	33%	45.08%
West Asia	1,664	1,903	14%	5.39%
Iraq	528	735	39%	2.08%
Japan	5,554	7,274	31%	20.59%
Southeast Asia	708	1,015	43%	2.87%
Other East Asia	3,485	4,318	24%	12.22%
Taiwan	1,354	1,577	16%	4.46%
Korean, Rep.	1,693	2,250	33%	6.37%
Africa	1,784	2,272	27%	6.43%
North Africa	1,279	1,659	30%	4.70%
Egypt	761	786	2%	2.22%
Latin American & Caribbean	3,765	4,401	17%	12.46%
Caribbean Islands	829	867	5%	2.45%
Mexico	1,215	1,726	42%	4.88%
Canada	1,776	1,973	11%	5.58%
Total	27,876	35,334	27%	100.00%
Developed countries	15,031	17,883	19%	50.61%
Less developed countries	11,498	14,346	25%	40.60%
Centrally planned countries	1,347	3,106	131%	8.79%

*In this table the individual country subtotals will not necessarily equal the regional totals, and the sum of the regions does not sum to the global total because some of the smaller countries and regions were omitted from the table. Source: *Agricultural Outlook*, January-February 1989

Table 2
Nebraska Crop Values, Value & Percent of U.S.
(1986-1988 fiscal years)

Commodity group	1986	Nebraska 1987 ($ millions)	1988	1986	Nebraska/US (%) 1987	1988
Corn for grain	1,361,920	1,591,912	2,086,920	10.86%	11.38%	16.04%
Sorghum for grain	183,830	176,904	223,258	13.90%	14.83%	16.40%
Oats	24,001	28,577	31,616	5.10%	4.72%	5.62%
Barley	6,480	3,240	3,648	0.65%	0.33%	0.46%
All wheat	169,480	21,210	259,200	3.36%	0.39%	3.91%
Winter wheat	169,480	21,210	259,200	4.73%	0.54%	4.61%
Rye	1,449	1,668	3,300	4.97%	5.17%	8.91%
Soybeans for beans	424,536	485,534	541,620	4.58%	4.29%	4.56%
Dry edible beans	70,172	59,970	103,510	16.09%	14.06%	18.12%
All hay (bales)	251,192	274,600	419,895	2.92%	3.06%	3.95%
All potatoes	14,452	13,376	22,055	0.80%	0.81%	1.15%
Sugar beets	45,078	39,121	NA	5.00%	3.62%	NA

Source: *Nebraska Agri-Facts*, Nebraska Agricultural Statistics Service, February 1989

1986 to 16.4 percent in 1988. Nebraska accounted for over 18 percent of dry edible bean production in 1988. Although dry edible beans are relatively minor in terms of total production, dry edible bean exports have risen in recent years from 23 percent of output in 1983 to 40 percent in 1987.

It is not generally possible to determine exports of agricultural commodities from specific states. It is possible, however, on the basis of each state's contribution to production of certain agricultural commodities to estimate the state's exports of particular commodities. The United States Department of Agriculture (USDA) bases their estimates on the proportion of each state's production compared with total U.S. production. The procedure is refined using sales data from the Census of Agriculture, customs district shipments, feed-livestock balances, Agricultural Marketing Service reports, and commodity market information. Although the procedure does not reflect possible costs of transporting Nebraska products to seaports, it does provide a rough estimate of the state's agricultural exports.

In 1987, Nebraska ranked fourth overall in cash receipts from agriculture. The only states surpassing Nebraska were California, Texas, and Iowa. Table 3 shows Nebraska's rank in agricultural commodity exports for the 1987 fiscal year. In terms of the top ranked export commodities (soybeans, corn, and wheat), Nebraska ranked seventh, third, and eleventh, respectively. Because of the pooled nature of U.S. agricultural exports and the difference between the calendar and fiscal year, Nebraska's cash receipts are not directly comparable with U.S. exports.

Table 3
Nebraska's Rank Among States
In Agricultural Commodity Exports
(1987 fiscal year)

Commodity group	Nebraska's rank
Soybeans & products	7
Feed grains & products	3
Hides & skins	3
Live animals & meat	3
Vegetables & preparations	9
Feeds & fodders	4
Animal fats	3
Seeds	5
Total	4

Source: *Foreign Agricultural Trade of the United States* (March/April 1988)

Nebraska is one of the nation's dominant producers of agricultural commodities. Although Nebraska is only a small state in terms of its population, it produced nearly 5 percent of the cash receipts of total U.S. agricultural commodities in the 1987 fiscal year. For individual commodity groups, the state's performance was even better. In 1987, Nebraska produced over 11 percent of the nation's cash receipts for cattle and calves.

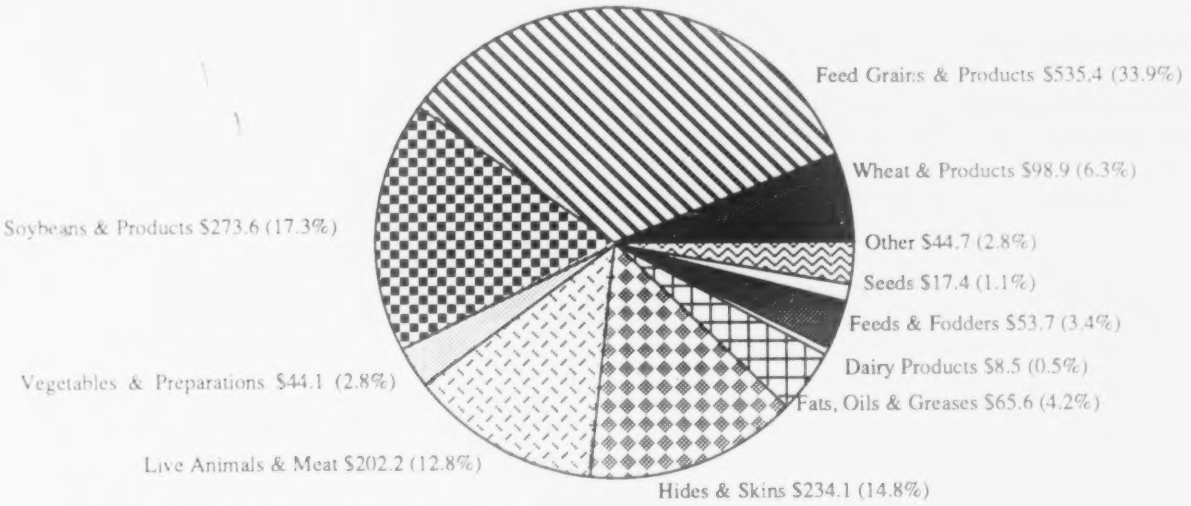
Figure 1 shows the value of Nebraska's agricultural commodity export shares for the 1987 fiscal year. It also shows the percentage contribution of each of these commodity groups to total Nebraska agricultural commodity exports in that year. Figure 2 shows the value of Nebraska's agricultural commodity exports as a percentage of U.S. exports for that commodity group. In 1987, Nebraska contributed $1578.3 million (5.66 percent) of total U.S. agricultural exports. In some commodity groups, the state's percentage of contribution was much higher. In the feed grains and products group, which includes corn exports, Nebraska contributed $535.4 million (11.49 percent) of U.S. corn exports. Other significant commodity groups (as a percentage of total U.S. exports for that commodity group) were live animals and meat (12.4 percent) and hides and skins (14.05 percent). Although in dollar values fats, oils, and greases make a smaller contribution to total Nebraska agricultural exports (4.16 percent), U.S. exports in the commodity group are an even lower portion of total exports. Thus, Nebraska exports made a significant contribution to total U.S. exports of fats, oils, and greases (15.74 percent).

Some of these commodity groups represent by-products from Nebraska's livestock industry. For example, Nebraska's hides and skins exports grew over 35 percent between 1985 and 1987. The major destination of this commodity was South Korea which accounted for approximately 33 percent of the market.

Outlook

Although the trade-weighted exchange rate for U.S. trade in agricultural commodities has remained relatively stable over the past year, our competitors in wheat, soybeans, and corn have had a significant average reduction in their exchange rates. The relative change means that their exports have become relatively cheaper. The U.S. has become less competitive in the major

Figure 1
Value of Nebraska Export Shares of Agricultural Commodities
(1987 fiscal year)
($ millions)



Source: *1987 Nebraska Agricultural Statistics*

commodities that Nebraska traditionally has supplied to export markets.

The problem with agricultural commodities is that prices can be volatile, changing with weather conditions, government policy, and variable demands. Not only are prices volatile, but export demand fluctuates considerably from year to year. Major customers such as the Soviet Union are subject to wide swings in demand, generally only importing to make up for shortfalls in their production plan. The federal government has aimed to smooth some of the wide price fluctuations for agricultural commodity producers through target prices for grains. Unfortunately, it is difficult to determine what prices represent the trend, and such schemes typically generate subsidies. The use of long-term contracts with our major customers of agricultural commodities also serves to ease price fluctuations, but can lock in unfavorable terms if economic conditions change.

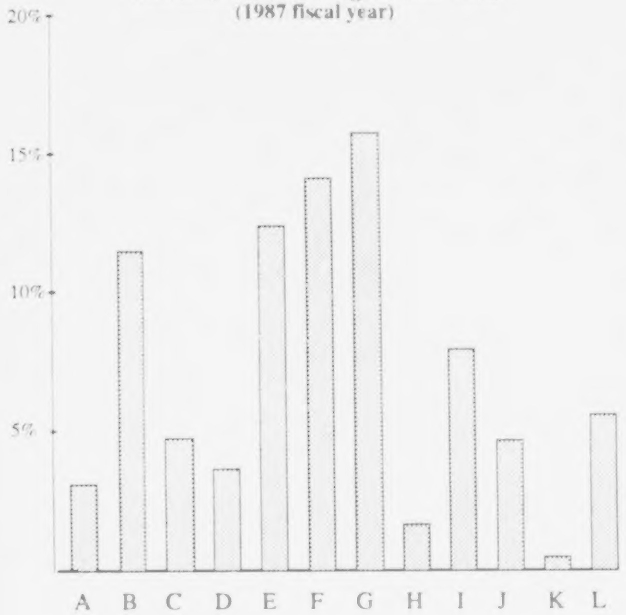
The Export Enhancement Program

The U.S. federal government recognizes that U.S. exporters of agricultural commodities face competition from subsidized foreign exports and from importers' trade barriers. To assist U.S. exporters competing with other exporters' subsidies and to alleviate world hunger, a number of assistance programs have been developed. Perhaps the most important of these is the Export Enhancement Program (EEP). The EEP was announced in May 1985. The stated objective of the EEP was to help U.S. exporters meet competition from subsidized exporters in specific markets. Administered by the Commodity Credit Corporation (CCC), the EEP operates through a bonus system. Bonuses, which are roughly the equivalent to the difference between U.S. market prices and export prices, are awarded via a two step competitive bid process. The CCC targets a country for a specific quantity of a commodity, and exporters then compete for sales to the targeted market on the basis of the prospects of receiving a CCC bonus. U.S. exporters then bid for the bonuses. The CCC awards the bonuses to the exporter whose sale price falls within a predetermined range and whose bonus also falls within an acceptable range. Finally, the exporter or exporters, upon presentation of proof of the commodities' arrival at their destination, receive the bonus in the form of generic certificates redeemable for CCC commodities. The generic certificates either may be sold or redeemed.

In addition to the EEP, the U.S. also operates the CCC Export Credit Guarantee Program (GSM-102) and the Intermediate Credit Export Credit Guarantee Program (GSM-103) which help importers of U.S. agricultural commodities overcome foreign exchange constraints by guaranteeing repayment of private credit to importers. As of mid-March 1988, credit guarantees approved under the fiscal 1988 program for GSM-102 and GSM-103 were approximately $1.7 billion and $140 million, respectively.

The Targeted Exporters Assistance Program (TEA) aids producers whose exports have been hurt by a foreign government's policies. Although the objective of the TEA sounds similar to the EEP, the TEA program differs from the EEP in several respects. First, TEA applies to all affected exporters. The TEA program promotes exports of a specified category or brand of American commodity or products in specified markets. The EEP, however, provides a price subsidy to specified exporters for specified commodities to specified markets. Second, although both the EEP and the TEA program aim to counter competitors'

Figure 2
Export Shares of Agricultural Commodities
Nebraska as a Percentage of U.S. Value
(1987 fiscal year)



Source: *1987 Nebraska Agricultural Statistics*

subsidies, the TEA program also can be used against unfair import policies. Finally, while the EEP involves mostly bulk commodities, the TEA involves mostly high value products.

P.L. 480 and Section 416 programs are food aid programs. The P.L. 480 program provides long-term concessional credit to designated countries for the purchase of specific U.S. agricultural commodities. About $1.5 billion was allocated during the 1988 fiscal year for P.L. 480 programs. The Section 416 program involves donations of CCC-owned commodities overseas. For the 1988 fiscal year, 2.6 million tons of CCC grain and oilseeds were made available under the Section 416 program.

The economic impact of these programs is difficult to measure. It appears that these programs account for a significant share of specific commodity exports. For example, export programs accounted for nearly 70 percent of wheat and flour exports during the 1988 fiscal year. In addition, four of the top five markets for wheat in 1987 were chief markets for wheat under the EEP, CCC credit guarantees, or food aid. More than half of U.S. vegetable oil exports during the 1987 fiscal year involved export assistance programs. Only small amounts of vegetable oils were shipped under the EEP, with the bulk of export assistance coming from the Export Guarantee Assistance program and U.S. food aid. Feed grain exports remain relatively unsubsidized. There are some notable exceptions, however. During the 1987 fiscal year, importers in Mexico and South Korea, which were the second and third largest markets for feed grains, made purchases under CCC export credit guarantee programs, and Saudi Arabia, which was the fifth largest market for feed grains, imported all its U.S. barley under the EEP.

Although these programs may stimulate agricultural exports, there will be intense pressure to justify these payments. Exporters of agricultural commodities should not count on such programs always being present. The EEP and other export assistance programs may keep agricultural export prices in line with subsidized competitors, but many other exporting or import competing industries face a higher tax burden to fund such programs. Also, such subsidies may stifle development of other exports not been targeted by the CCC.

The USDA has noted that although a targeted export subsidy program generally strengthens domestic prices by reducing domestic supply, the export subsidy program may result in lower domestic prices for producers. For example, if domestic prices strengthen while competitors' prices do not, the bonus needed rises. The effect of the initial strengthening of domestic prices may be that the larger amount of bonuses paid may release CCC-owned commodities onto the market, possibly depressing domestic prices. Furthermore, lower domestic prices could result in increased deficiency payments for farmers. It is necessary, therefore, to structure export assistance programs to minimize such counterproductive effects.

The 1987 fiscal year was a disappointing one for agricultural commodity export prices. They now have rebounded. In 1987 corn prices were only $1.95/bu. By March 1989, they had risen to $3.03/bu. Similarly, wheat prices at $3.11/bu in 1987 rose to $4.88/bu by March 1989. Grain export volumes have shown a steady rise since 1985-1986. This represents the best of both worlds to Nebraska grain producers, because there is normally an inverse relationship between prices and volumes.

The USDA forecasts that the value of U.S. agricultural exports will reach $36.5 billion in 1989. World prices for wheat, corn, and soybeans are expected to be the highest since 1985. The resulting forecast gain of $2.5 billion in grain and feed exports is expected to more than offset anticipated declines in cotton and oilseeds. The above mentioned factors suggest further growth for Nebraska's exports of agricultural commodities. It must be stressed, however, that Nebraska's current position and continued growth in the agricultural sector are dependent on the contribution of Nebraska's groundwater for irrigation. The Ogallala Aquifer and associated aquifers provide water resources essential for agricultural prosperity. Any serious depletion in the aquifers would affect Nebraska's contribution to the nation's agricultural sector.

An important additional factor in the U.S. agricultural trade policy is the role of imports of agricultural commodities. The U.S. imposes direct and indirect trade restrictions on the import of many agricultural commodities. It has been the objective of such trade barriers to protect U.S. producers from the effects of foreign agricultural commodities. It is possible, however, that such barriers could stifle incentives for farmers to diversify into nontraditional products.

Although total agricultural exports ($35,323 million) exceeded total agricultural imports ($21,011 million) in 1988, imports in certain commodity groups traditionally have exceeded exports. Perhaps the most significant commodity group in this respect for Nebraska is beef. The U.S. imported 2,335 million pounds of beef during 1988, in contrast to only 654 million pounds of beef exports for the same year. This means that over 9 percent of beef consumed in the U.S. was imported. Although beef exports have been rising at a faster rate than beef imports in recent years, there is still a substantial trade imbalance. About 90 percent of imported beef is covered by the Meat Import Law, which sets a ceiling on imports. Under this law, a trigger level is set by product weight. To ensure that the trigger level was not reached, however, voluntary restraint agreements were negotiated with Australia and New Zealand in 1988. Nebraska was the fifth largest pork producer during fiscal 1987. Imports of pork were 1,137 million pounds, in contrast to 195 million pounds of pork exports. There also may be opportunities for expansion of Nebraska pork on the domestic market. Because an even more severe trade imbalance exists in processed meat products, there may be market niches for Nebraska producers to exploit in this area. Nebraska producers could use existing feed grain surpluses (corn and sorghum for grain) to bolster sales of import competing products such as beef and pork. Also, these products can be used in processing, which enhances the value of these products.

It is clear that Nebraska's agricultural exports continue to play a significant role in U.S. agricultural trade. The chief examples of Nebraska's export contribution are corn and sorghum for grain. Other export commodities such as hides and skins are growing rapidly. Although many of the agricultural commodities that Nebraska exports are influenced strongly by the federal government through trade policy measures, foreign aid measures, and agricultural support, there still exist entrepreneurial opportunities for Nebraska in agricultural exports. Nebraska's future growth opportunities in exports may lie in adding value to agricultural commodities through further processing.

References

Barkema, A. and M. Drabenstott, "Can U.S. and Great Plains Agriculture Compete in the World Market?" *Economic Review* (February 1988), pp. 3-17.

Foulke, J., "Korea Becomes Second-Largest U.S. Export Market," *Farmline* (February 1989).

Nebraska Department of Agriculture, Nebraska Agricultural Statistics Service, *Agriculture Statistics* (1987).

Nebraska Department of Agriculture, Nebraska Agricultural Statistics Service, *Nebraska Agri-Facts*, Issue 04-89 (February 1989).

U.S. Department of Agriculture, Economic Research Service, *Agricultural Outlook* (various issues).

U.S. Department of Agriculture, Economic Research Service, *Economic Indicators of the Farm Sector, State Financial Summary* (1987).

U.S. Department of Agriculture, Economic Research Service, *Foreign Agricultural Trade of the United States* (March-April 1988).

Electric Power in Nebraska

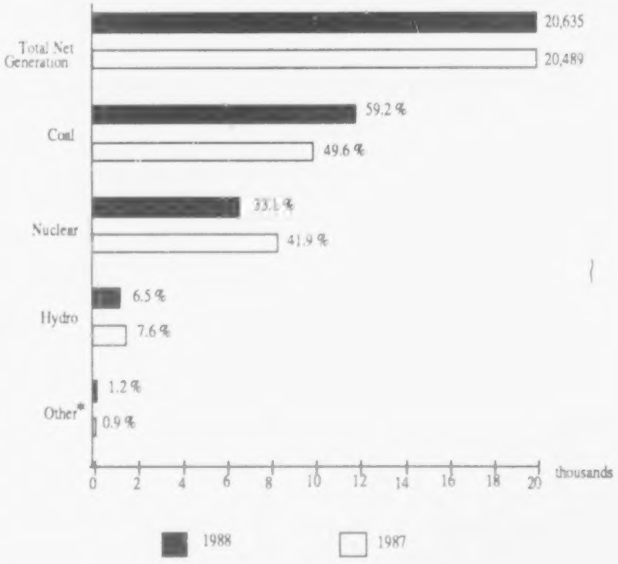
Total net generation of electricity in Nebraska during 1988 totalled 20,635 gigawatthours (1 GWh = one billion watthours), slightly more than was generated in 1987. Total sales of electricity last year were 17,498 GWh, an increase of 4.3 percent over one year earlier.

Electric Power Monthly, a publication of the U.S. Department of Energy, reports that generation from coal-fired plants during 1988 accounted for 59.2 percent of total generation in Nebraska, (see Figure A). That percentage compares with 49.6 percent for 1987, a difference of nearly ten percentage points. Nuclear power ranks second as the energy source for electricity generation in our state. In 1988, approximately one-third of the generation came from nuclear power, a portion considerably less than that of 1987. Other energy sources include hydroelectricity, petroleum, and gas. Collectively, they account for less than 9 percent of electric generation.

During 1988, residential consumers purchased nearly 40 percent of the total sales of electricity. Commercial interests and industries consumed 29.0 percent and 23.7 percent of total sales, respectively.

Merlin W. Erickson

Figure A
Net Generation of Electricity by Energy Source
Nebraska, 1987 and 1988



*Includes petroleum and gas
Source: *Electric Power Monthly* (December 1988)

Monitoring a Muddled Economy

What data should be used to chart the future economy? It is important to look at a variety of numbers. The economy is sufficiently complex that no single series can tell the whole story.

We have focused on the importance of inflation and the reaction of monetary authorities in the last several issues of *Business in Nebraska*. What other factors should we consider in predicting the future of the economy?

A basic approach to monitoring the economy is to look at its major components (the consumer sector, the investment sector, and the government sector) and identify growth rate sources. The important influence on growth rates is volatile numbers. Steadily growing numbers contribute to the base rate of growth but do not contribute to its variability.

An example is the consumer sector. Consumption of services tends to grow steadily throughout the business cycle. Consumer nondurables show somewhat more volatility, but are still rather steady. The consumption of durables is the volatile component in the consumer sector. Key components of consumer durables are automobiles, appliances, some recreational goods, and other durable household goods. Consumer durables typically have a relatively long life and are usually financed.

Automobile sales tend to run in their own cycle, related mostly to changes in disposable income, interest rates, and the composition of the stock of automobiles in the economy. 1988 was a relatively good year for automobile sales. It is doubtful that the sales of autos and light trucks will reach the same levels in 1989.

Appliance sales generally are tied to changes in housing starts. Many new home purchasers require that their homes be outfitted by the builder when purchased. Thus, household appliances with a lifetime of ten to 15 years are financed by 30 year mortgages.

Housing starts will fall throughout 1989. Thus, household appliances will not have an especially good year this year. Other consumer durables that may show high volatility are recreational goods such as boats, motor homes, and trailers. The cycle and determinants of purchases are similar to those of autos.

Another major component of economic growth is in the investment sector. The investment sector is fairly volatile. There are two major parts of this sector: residential and business investments. The housing cycle is vulnerable to changes in interest rates. Housing starts fall early in the business cycle as interest rates are increased by the monetary authority to control economic growth. The fourth quarter of 1988 appears to be an exception. Housing starts were strong despite increases in interest rates. 1989 housing starts have started to fall and probably will continue to drop throughout the year.

The business investment component has three major parts: structures, equipment, and inventory changes. Investment in structures tends to lag the rest of the economy. It is hard to stop building projects once they are under way. In the current expansion, some have argued that building projects are characterized by marginal additions to existing plant rather than a large scale expansion of new plant.

Business investors, being somewhat better informed about the business cycle than the general public, may be more capable of anticipating downturns. Thus, business equipment purchases would be a leading indicator for the economy. Investment in equipment, however, appears to be coincident with the business cycle. The purchase of equipment in most corporations is wrapped in bureaucratic procedures. If a company commits to equipment purchases, it often is difficult to rescind those commitments.

In 1988, the U.S. economy had a near boom in capital equipment. A large part of the increase went to export markets, but a substantial amount of capital equipment went into the expansion of U.S. productive capacity. Continued high levels of capital investment can alleviate production bottlenecks and allow an expansion phase to continue. Because the series involved are volatile, monitoring capital equipment is difficult. Nevertheless, it is reasonable to suppose that as economic growth rates slow, the acquisition rate of capital goods also will slow.

Orders of capital equipment vary so much that patterns are hard to distinguish. In particular, orders in transportation and defense equipment tend to be highly volatile. For a better idea of what is happening in the capital equipment sector, one can look at sales or deliveries. These series are more stable. Further stability can be obtained with quarterly or semi-annual data or some moving average of data. Such manipulations of data tend to limit the usefulness of the resulting series as an indicator of current events. Given the coincident nature of investments in business fixed investment, downturns will be of little help in predicting a recession. Instead, such downturns may identify a recession in progress.

Business inventories are a small component of the investment sector, but they are also a volatile component. A key item to watch is the inventory-to-sales ratio. That ratio is approximately 1.5, meaning that businesses are keeping inventories equal to 1.5 month's sales. That ratio appears to be ideal for a broad range of businesses. If a slowdown begins, a rapid change in the inventory-to-sales ratio can occur. The ratio is a common monitor of the health of individual businesses. Rapid increases in the inventory-to-sales ratio will be addressed by cutting production or purchases.

The other major component in the economy to consider is the government sector. The state and local component of the government sector is fairly steady and is larger than the federal component. Although the federal component is more volatile than the state and local component, it is relatively steady when compared to other economic variables. 1988 was an exception. Federal government purchases followed a sawtooth pattern last year. It is likely the sawtooth pattern will continue until the new administration is settled.

In summary, the key variables to monitor for insights on future growth are consumer durables (especially automobiles and household appliances); housing starts; and business inventories (particularly the inventory-to-sales ratio).

John S. Austin

Review and Outlook

National Economy

The economy continues to send mixed signals, typical of an economy approaching a turning point. Mixed signals can characterize an economy for an indeterminate time before a downturn starts. The variable length of the mixed signal phase is why predicting the start of a recession is difficult. Current signals are inflation at a higher rate than desired, a flat industrial sector, continued employment growth, and low rates of unemployment.

March inflation was considered acceptable by many observers. But in the first quarter, inflation accelerated. In March, the Producer Price index increased 0.4 percent from February. For the first quarter, it advanced 10.2 percent at annual rates. The Consumer Price Index advanced 0.5 percent in March, 6.1 percent at annual rates in the first quarter.

It is easy to be lulled into a false sense of confidence by the factors associated with these run-ups in price. The run-ups have been in food and energy, particularly in oil prices. There was also a singular burst in apparel prices in the latest Consumer Price Index. An acceleration of inflation does not start as neat, across the board increases in all prices. If the factors we have seen in the latest sets of price releases are short-term factors, we expect to see corrections in the second quarter. We anticipate that food and apparel price inflation will ease in the near term.

We expected oil prices to correct themselves during this year. So far, we have been wrong. The discipline within OPEC has not been good; nevertheless, oil prices have not decreased. Oil demands have been large enough to accommodate the overrun. OPEC supplies less than half of the U.S. imports of crude oil and oil products. Approximately 38.1 percent of U.S. crude oil needs are supplied by imports.

The oil spill in Alaska should not be a big factor in the long term. In 1988, Alaska provided 15.3 percent of U.S. crude oil needs. Not all Alaskan oil shipments have ceased, despite the Exxon Valdez spill. Thus, the Alaskan interruption should be short term.

The oil spill in Alaska was viewed by many, however, as an excuse to raise prices. The Alaska oil spill was compounded by an explosion in a drilling platform in the North Sea. Although the U.S. consumes little North Sea oil, it does impact the world market. There has been no retreat in prices, and and there have been some remarkably strong increases at the wholesale level and in the futures market. With the summer driving season coming, demands in the U.S. for oil and oil products will accelerate. Therefore, there likely will be no substantial reduction in oil inflation until fall. Consequently, it is increasingly difficult to be optimistic about near term inflation. Instead, we expect wholesale oil price increases to lead to consumer price increases over the next several months. Energy prices have a broad influence on other prices.

So far this year, the Federal Reserve seems to be content with its degree of monetary tightness. One of the reasons for the even keel policy at this time is the mixed signaling of the real economy.

Industrial production has been flat in the first quarter. After leaping to a new high in January, the Industrial Production Index recorded no growth in February and March. Capacity utilization rates have decreased moderately. As the numerator of capacity utilization is industrial production, the decline in the capacity utilization rate has come from growth in capacity. That growth is related directly to 1988 investment levels in U.S. productive capacity. In the industrial sector, factory orders decreased in February. There has been a slight buildup in factory inventories. Consumer confidence, as measured by the Conference Board,

Table I
Income and Earnings In Nebraska
($ millions)

	First Quarter 1987	Second Quarter 1987	Third Quarter 1987	Fourth Quarter 1987	First Quarter 1988	Second Quarter 1988	Third Quarter 1988	Fourth Quarter 1988	% Change 1988:IV vs. Yr Ago
Income									
Total Personal Income	22,622	22,206	21,944	24,610	23,452	24,218	23,198	24,328	-1.1%
Nonfarm	20,327	20,494	20,830	21,262	21,542	21,760	22,067	22,607	6.3%
Farm	2,295	1,711	1,113	3,348	1,910	2,458	1,130	1,721	-48.6%
Earnings by Industry**									
Ag. Ser., For., & Fish.	73	72	75	82	86	84	84	97	18.3%
Mining	40	46	50	51	46	49	48	48	-5.9%
Construction	928	864	851	885	969	931	914	966	9.2%
Manufacturing	2,121	2,134	2,206	2,255	2,342	2,312	2,367	2,413	7.0%
Nondurable	1,041	1,067	1,093	1,121	1,143	1,151	1,183	1,160	3.5%
Durable	1,080	1,068	1,113	1,133	1,199	1,162	1,184	1,253	10.6%
Transp. & Pub. Utilities	1,571	1,574	1,612	1,629	1,661	1,693	1,714	1,763	8.2%
Wholesale Trade	1,105	1,116	1,142	1,160	1,199	1,230	1,242	1,335	15.1%
Retail Trade	1,528	1,543	1,556	1,574	1,613	1,633	1,655	1,683	6.9%
Finance, Insur. & Real Est.	1,161	1,149	1,177	1,197	1,192	1,216	1,240	1,252	4.6%
Services	3,154	3,207	3,279	3,387	3,355	3,530	3,597	3,772	11.4%
Government	2,886	2,917	2,936	2,999	3,032	2,973	3,011	3,015	0.5%
Federal, Civilian	453	451	462	467	470	466	467	481	3.0%
Military	396	397	400	400	407	405	405	408	2.0%
State & Local	2,037	2,069	2,075	2,132	2,156	2,102	2,139	2,126	-0.3%

*All data are seasonally adjusted at annual rates
**Earnings are the sums of wages and salaries, other labor income, and income earned by sole proprietors

has been up and down in the first quarter. The unemployment rate dropped to 5.0 percent in March.

Consumer spending continues to rise, especially in the consumer service area. Consumption of nondurables is relatively flat, while the consumption of durables fell sharply in February. That decrease is related to a drop of automobile sales in February. March auto sales were lackluster. The auto industry tried to correct the downturn with incentives. Ford and GM recently announced planned production cutbacks of 2 percent to 3 percent to cut bloated inventories. These inventories amount currently to 80 days of sales. The auto industry tries to keep inventories in the 60 to 65 day range.

First quarter GNP statistics confuse the picture of the current economy. Growth in the first quarter was high, in large part because of accounting adjustments for last year's drought. First quarter real GNP growth was 5.5 percent on an annualized basis. Without the drought adjustment, real GNP would have grown 3.0 percent. This rate of growth will be revised in later releases of the GNP statistics.

Given the size of the change, the size of the revisions could be substantial. It is unlikely that increases in the remainder of this year will be of the magnitude of the increase of the first quarter. The typical forecast calls a growth slowdown in the second quarter.

Can we survive without a recession? Professor Lawrence Klein, Nebraska Nobel laureate and founder of the WEFA Group (a forecasting organization), assures us that a recession is a natural phenomena and cannot be avoided. Other economists (the so-called control theorists) believe that it is possible, although difficult, to avoid a recession.

From our point of view, the possibility of a recession is strong. The question of when a recession will occur is a difficult one. Pessimists have looked for a recession since 1986. The economy was weak in 1986, but an oil price deflation deflected the threat of a downturn at that time. Calling a recession is difficult—even when one begins, analysts will not be able to recognize the onset.

Nebraska Outlook

Personal income in Nebraska for 1988 recently was reported by the U.S. Department of Commerce. The state's performance showed a solid gain of 6.6 percent over 1987. That increase was led by a strong advance of 10.4 percent in farm sector personal income. The nonfarm component increased 6.2 percent. The large increase in Nebraska's farm income occurred despite a downturn in the fourth quarter of 1988. The 1988 drought had a favorable impact upon Nebraska personal income.

In comparison to the U.S., Nebraska's personal income gains lagged slightly. For the U.S. as a whole, personal income increased 7.3 percent. Nebraska's gain in personal income outstripped the Plains states. The region showed a 5.5 percent gain. Nebraska's positive farm income growth ran directly opposite to farm income decreases in the region. The latter decreased 21.6 percent in 1988. The picture reverses in the nonfarm component of personal income. Nebraska's nonfarm personal income gains of 6.2 percent lagged those of the Plains states (6.7 percent) and were well behind the U.S. pace of 7.5 percent.

The strongest gains in the earnings component of Nebraska's nonfarm personal income came from agriculture services (12.4 percent), followed closely by wholesale trade (11.2 percent) and durable goods manufacturing (11.1 percent). Services grew 9.0 percent. All other major segments except mining showed increases in 1988. The mining sector, a small sector in our state, fell

Table II
Employment in Nebraska

	Revised Feb. 1989	Preliminary Mar. 1989	Mar. % Change vs. Year Ago
Place of Work			
Nonfarm	696,650	702,844	3.7%
Manufacturing	97,339	97,335	5.2%
Durables	47,277	47,554	4.7%
Nondurables	50,062	49,781	5.7%
Mining	1,352	1,328	-7.8%
Construction	22,033	23,463	6.8%
TCU*	46,342	47,011	8.2%
Trade	179,423	180,839	4.1%
Wholesale	51,038	51,501	5.0%
Retail	128,385	129,338	3.8%
FIRE**	48,543	48,627	2.3%
Services	162,162	163,561	4.2%
Government	139,456	140,680	0.5%
Place of Residence			
Civilian Labor Force	803,244	812,370	1.2%
Unemployment Rate	3.2%	3.5%	

*Transportation, Communication, and Utilities
**Finance, Insurance, and Real Estate

Source: Nebraska Department of Labor

Table III
Price Indices

	Mar. 1989	% Change vs. Year Ago	YTD % Change vs. Year Ago
Consumer Price Index - U* (1982-84 = 100)			
All Items	122.3	5.0%	4.8%
Commodities	115.2	4.9%	4.7%
Services	130.0	5.0%	4.9%
Producer Price Index (1982 = 100)			
Finished Goods	112.2	5.6%	5.2%
Intermediate Materials	111.6	6.7%	6.4%
Crude Materials	103.1	9.6%	8.2%
Ag Prices Received (1977 = 100)			
Nebraska	163	15.6%	16.9%
Crops	142	43.4%	46.0%
Livestock	176	5.4%	6.1%
United States	149	14.6%	14.1%
Crops	137	24.5%	24.3%
Livestock	160	8.1%	7.2%

U* = All urban consumers
Source: U.S. Bureau of Labor Statistics

1.0 percent. The performance of personal income in 1988, and of the farm sector in particular, explains the state's strong retail sales growth. The latest data show that January net taxable retail sales were 8.8 percent ahead of year ago levels.

Nebraska's unemployment rate for March was 3.5 percent, a slight increase over the revised February rate of 3.2 percent. Nevertheless, Nebraska remains well below the U.S. unemployment rate. Such rates indicate that Nebraska remains close to full employment levels.

Looking ahead, the inflation in oil prices will affect the Nebraska economy adversely. Increases in fuel prices will raise farm costs, from the operation of tractors to center pivot irrigation systems. Furthermore, increases in gasoline prices will impact tourism and trucking in the state.

There is substantial doubt that Nebraska can sustain the types of gains in farm income that were experienced in 1988. The overall outlook for total income in our state calls for a reduction in rate of growth. The size of the reduction is related critically to future changes in agricultural income.

If the moisture conditions in our state that have characterized our early spring continue throughout the crop year, Nebraska's crop volumes will be affected more adversely this year than in 1988. Last year's drought brought good prices to Nebraska farmers, and production expenses stayed within reasonable bounds. These conditions, coupled with a good year in the livestock sector, created the substantial increase in farm personal income. Low moisture conditions across the food and feed grain belts this spring may result in good crop prices again.

Production expense may prove to be an Achilles heel, however. Reports indicate that irrigation systems are already in operation to sprout the corn crop. Expenses not typically incurred at this juncture of the season are arising. It is not clear what USDA will do concerning drought relief. USDA is looking at alternatives to a direct payments system. Also, federal budget slashers will continue to look longingly at ag subsidies and may score major successes if the economy falters this year.

John S. Austin

Table IV
City Business Indicators
January 1989 Percent Change from Year Ago

The State and Its Trading Centers	Employment (1)	Building Activity (2)
NEBRASKA	5.1%	34.8%
Alliance	2.9%	247.7%
Beatrice	2.6%	59.4%
Bellevue	2.5%	52.1%
Blair	4.0%	612.1%
Broken Bow	1.3%	-52.7%
Chadron	-4.5%	-52.4%
Columbus	4.2%	224.6%
Fairbury	3.6%	1490.4%
Falls City	1.4%	563.6%
Fremont	3.7%	16.7%
Grand Island	5.1%	45.6%
Hastings	3.7%	-10.6%
Holdrege	2.9%	-82.0%
Kearney	0.6%	19.6%
Lexington	3.4%	51.8%
Lincoln	3.1%	10.0%
McCook	3.8%	0.8%
Nebraska City	1.9%	59.1%
Norfolk	6.1%	-5.0%
North Platte	2.8%	54.1%
Omaha	3.6%	36.9%
Scottsbluff/Gering	1.2%	16.3%
Seward	3.1%	58.3%
Sidney	1.7%	23.6%
South Sioux City	2.3%	431.0%
York	2.4%	-62.2%

(1)As a proxy for city employment, total employment (labor force basis) for the county in which a city is located is used

(2)Building activity is the value of building permits issued as a spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Cost Index is used to adjust construction activity for price changes

Sources: Nebraska Department of Labor and reports from private and public agencies

Figure I
City Business Index
January 1989 Percent Change from Year Ago

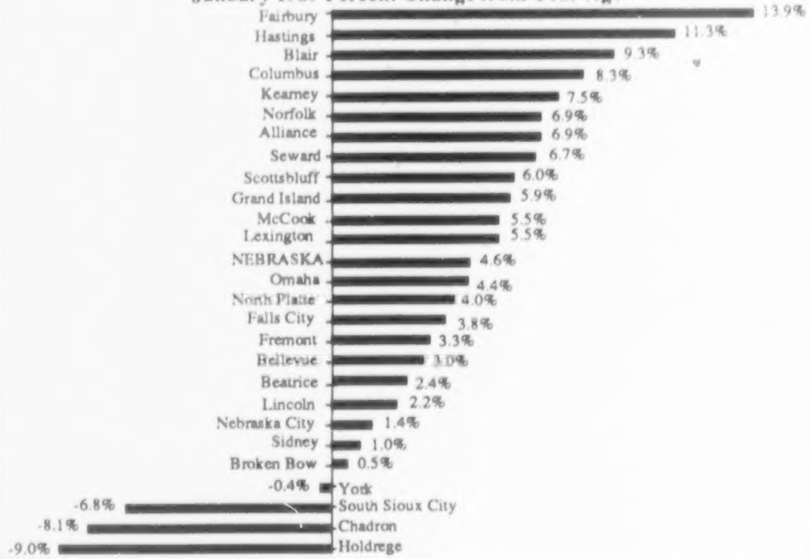
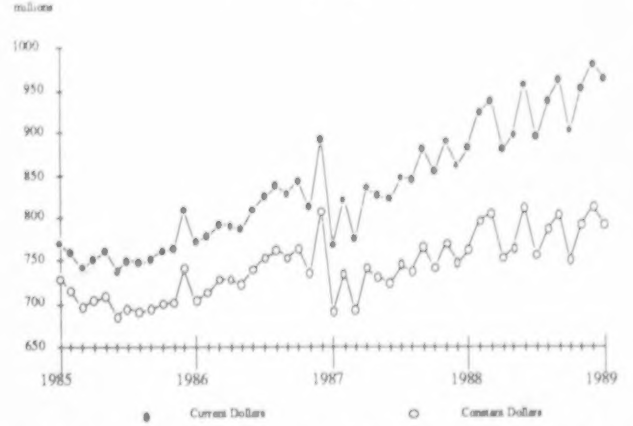


Table V
Net Taxable Retail Sales of Nebraska Regions and Cities

Region Number and City (1)	City Sales (2) Jan. 1989 (000s)	City Sales (2) % Change vs. Year Ago	Region Sales (2) Jan. 1989 (000s)	Region Sales (2) % Change vs. Year Ago	YTD % Change vs. Year Ago
NEBRASKA	$742,275	6.4	$852,281	8.8	8.8
1 Omaha	259,924	7.2	314,222	8.1	8.1
Bellevue	10,543	4.1	*	*	*
Blair	3,704	-0.2	*	*	*
2 Lincoln	103,155	5.3	117,065	7.5	7.5
3 South Sioux City	3,921	33.0	5,547	-24.8	24.8
4 Nebraska City	3,073	0.4	15,457	11.8	11.8
6 Fremont	13,050	6.5	24,478	6.8	6.8
West Point	2,387	13.0	*	*	*
7 Falls City	1,641	-9.8	7,617	0.0	0.0
8 Seward	3,603	11.6	13,201	7.7	7.7
York	5,785	11.9	13,685	17.2	17.2
10 Columbus	12,604	6.1	23,358	10.3	10.3
11 Norfolk	16,346	14.6	29,313	11.4	11.4
Wayne	2,324	14.9	*	*	*
12 Grand Island	28,219	8.6	41,044	15.4	15.4
13 Hastings	15,718	28.3	24,564	25.5	25.5
14 Beatrice	6,703	1.9	14,949	-5.0	-5.0
Fairbury	2,298	1.9	*	*	*
15 Kearney	17,561	19.3	25,410	21.0	21.0
16 Lexington	4,826	8.9	14,625	14.3	14.3
17 Holdrege	3,490	-0.5	7,296	10.5	10.5
18 North Platte	12,617	6.0	15,799	8.7	8.7
19 Ogallala	4,716	7.1	10,498	24.8	24.8
20 McCook	6,783	13.1	10,212	18.5	18.5
21 Sidney	3,149	2.4	7,289	9.5	9.5
Kimball	1,453	1.6	*	*	*
22 Scottsbluff/Gering	15,481	15.4	22,385	18.9	18.9
23 Alliance	4,452	3.5	12,171	6.1	6.1
Chadron	2,338	-1.6	*	*	*
24 O'Neill	3,683	10.7	12,649	25.1	25.1
Valentine	1,982	7.2	*	*	*
25 Hartington	1,393	8.0	7,652	14.8	14.8
26 Broken Bow	2,903	12.6	10,797	17.8	17.8

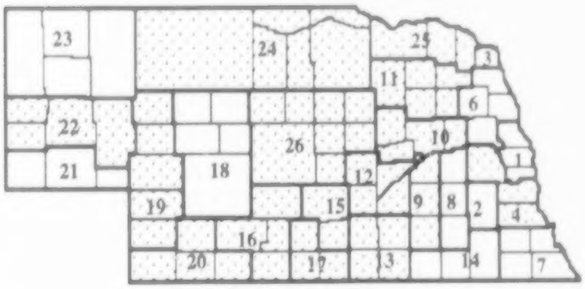
(1) See region map
(2) Sales on which sales taxes are collected by retailers located in the state. Region totals include motor vehicle sales
* Within an already designated region
Compiled from data provided by the Nebraska Department of Revenue

Figure II
Nebraska Net Taxable Retail Sales
(Seasonally Adjusted)



(1) The Consumer Price Index (1982-84 = 100) is used to deflate current dollars into constant dollars

Figure III
Region Sales Pattern
YTD as Percent Change from Year Ago



Shaded areas are those with sales gains above the state average. See Table V for corresponding regions and cities

BB Scoreboard

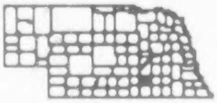
Percent change from same month one year ago

	State	Metro+	Nonmetro
Motor Vehicle Sales (Jan.) Constant $	↑ 22.7%	↑ 12.6%	↑ 29.6%
Nonmotor Vehicle Sales (Jan.) Constant $	↑ 1.7%	↑ 2.2%	↑ 1.1%
Building Activity (Jan.) Constant $	↑ 30.7%	↑ 22.8%	↑ 44.3%
Employment (Mar.)	↑ 1.7%	↑ 1.2%	↑ 2.3%
Unemployment Rate* (Mar.)	↓ 3.5%	↓ 3.2%	↓ 3.8%

+Omaha and Lincoln
*Unemployment is this month's rate, not a percent change from year ago

County of the Month

Clay



Size of county: 570 square miles, ranks 63rd in the state
Population: 7,600 (estimated) in 1987, a change of -6.4 percent from 1980
Median age: 33.0 years in Clay County, 29.7 years in Nebraska in 1980
Per capita personal income: $16,586 in 1987, ranks 10th in the state
Net taxable retail sales ($000): $32,148 in 1988, a change of +4.8 percent from 1987; $2,529 during January 1989, a change of +16.8 percent from the same period one year ago
Number of business and service establishments: 188 in 1986; 70.2 percent had less than five employees
Unemployment rate: 2.9 percent in Clay County, 3.6 percent in Nebraska for 1988
Nonfarm employment (1988):

	State	Clay County
Wage & salary workers	688,146	2,145
	(percent of total)	
Manufacturing	13.8%	4.4%
Construction and Mining	3.8	4.1
TCU	6.5	9.0
Retail Trade	18.5	10.4
Wholesale Trade	7.3	17.5
FIRE	7.0	2.5
Services	23.0	13.3
Government	20.1	38.8
Total	100.0%	100.0%

Agriculture:
Number of farms: 664 in 1982, 719 in 1978
Average farm size: 543 acres in 1982
Market value of farm products sold: $110.8 million in 1982 ($166,917 average per farm)

Sources: U.S. Bureau of the Census, U.S. Bureau of Economic Analysis, Nebraska Department of Labor, Nebraska Department of Revenue

Merlin W. Erickson

Business in Nebraska
PREPARED BY BUREAU OF BUSINESS RESEARCH
Association for University Business & Economic Research

Business in Nebraska is issued as a public service and mailed free of charge upon request to 200 CBA, University of Nebraska-Lincoln, Lincoln, NE 68588-0406. Copyright 1989 by Bureau of Business Research, University of Nebraska-Lincoln.

May 1989, Volume 44 No. 536

University of Nebraska-Lincoln--Martin Massengale, *Chancellor*
College of Business Administration--Gary Schwendiman, *Dean*

Bureau of Business Research
F. Charles Lamphear, *Interim Director*
James R. Schmidt, *Acting Associate Director*
Merlin W. Erickson, *Research Associate*
Margo Young, *Editorial Assistant*
John S. Austin, *Statistical Coordinator*
David D. DeFruiter, *Statistical Technician*

The University of Nebraska-Lincoln does not discriminate in its academic, admission, or employment programs and abides by all federal regulations pertaining to same.

Nonprofit Org.
U. S. Postage
PAID
Lincoln, Nebraska
Permit No. 46

CONGRESSIONAL INFO SERVIC270238
BR
SRI
4520 EAST-WEST HWY
BETHESDA, MD 20814

J 7860-1

Business In Nebraska

June 1989
Vol. 44 No. 537

Prepared by the Bureau of Business Research
200 College of Business Administration
University of Nebraska-Lincoln
Lincoln, NE 68588-0406
402/472-2334

The Undergraduate Research Associate Program

This month's Business in Nebraska features several articles written by undergraduate research associates at the Bureau of Business Research. The undergraduate research associate program is an innovation at the UN-L College of Business Administration designed to give students experience in applied research, statistics, and analysis. During the past semester, students assigned to the Bureau of Business Research explored several issues and concepts important to the Nebraska economy. Some of their research is summarized in the following articles.

A Leading Economic Index for Nebraska

David W. Taylor

From a National to a Nebraska Index

Although the national index of leading economic indicators is reported swiftly by the media, there has been no such record kept on a state level in Nebraska. Other states and some metropolitan areas issue similar indexes. A project to create composite indexes to measure economic activity within Nebraska was pursued by the Bureau of Business Research in 1985. The indexes were completed, but were not used on a continuous basis. Analysis shows that these indexes are successful in measuring the Nebraska economy on a level consistent with indexes used in measuring the national economy. This article is a continuation and current application of the original project.

The project consists of two parts. The first part is the composite index of coincident indicators, which is used to record turning points in the Nebraska economy. It marks the historical periods of expansion and decline. The second part, the composite index of leading indicators, is used to predict forthcoming changes in the coincident index and in the business cycle in Nebraska. The construction of the indexes was kept as simple as possible, but the indexes provide meaningful economic data.

Background

Talk of an approaching economic recession can be heard daily. While the Federal Reserve performs a balancing act between inflation and depressed economic growth, economists speculate when the next recession will occur. Individual sectors of the national economy can be used to determine whether predictions of a slowdown are warranted; for example, the government's index of leading economic indicators experienced two consecutive monthly declines before the advance of 0.8 percent in April.

The index of leading economic indicators is a statistical tool used to anticipate economic activity. It is used to forecast changes in the business cycle. A marked decline in this index can point to a downturn in business activity. A typical recessionary period would be characterized by negative growth in real Gross

(continued on page 2)

A Primer on Capital Budgeting

Harold D. Peck, Jr.

Capital budgeting is a financial management tool to determine criteria for investing in long-term projects. Although corporations long have used capital budgeting techniques, substantial numbers of small businesses and farmers have yet to adopt them. Operating a business has become more capital extensive over the past two or three decades. As new technology has developed, capital goods have become more productive. The cost of purchasing and operating some of these capital goods also has increased.

The personal computer is a classic counterexample. Not only has there been rapid advance in productivity, but also a decrease in unit cost in personal computers. It is important to examine capital investment opportunities in a way that will produce a ranking of alternatives. In essence, capital budgeting is the process of deciding which long-term capital investments should be made.

(continued on page 4)

National Product and high levels of unemployment. The last recorded recession in the United States occurred between July 1981 and November 1982.

Components of the National Index

The composite index is compiled from various indicators that measure the health of the economy. There are three classifications of indicators that can be used for analysis: leading, coincident, and lagging. Movements of leading indicators precede movements of the business cycle. Such indicators reach their peaks and troughs in advance of the business cycle's peaks and troughs. Coincident indicators move with the business cycle and are used to confirm the dates of peaks and troughs of the business cycle. Finally, lagging indicators move behind the business cycle, reaching their peaks and troughs after the coincident indicators' peaks and troughs.

A given composite index combines several individual indicators in an attempt to provide a broader and more reliable measure of economic activity. The individual indicators chosen represent diverse sectors of the economy, yet they all closely monitor the business cycle. Technical methods are applied to select the indicators used in the composite indexes produced by the U.S. Department of Commerce—the following criteria are used in selecting indicators:

1) The indicator should measure correctly relevant economic processes;
2) The indicator should exhibit a consistent relationship with the business cycle over time;
3) The indicator should not be controlled by irregular or random movements;
4) The indicator should be reported promptly and on (at least) a monthly basis.

A combination of indicators following these criteria should provide an ample measure of ongoing economic activity. It should be taken into consideration, however, that there is no theoretical justification for using indicators to predict the business cycle.

Business Conditions Digest, published by the U.S. Department of Commerce, provides monthly data on 111 individual economic indicators. Eleven of these series are combined in the index of leading indicators. Four series compose the coincident index, and six series compose the lagging index.

Construction of the Coincident Index

There are difficulties in compiling indexes at the state level. One of the main drawbacks is that much of the relevant economic information used to construct the individual series is not published quickly enough at the state level to allow for timely inclusion in the indexes. Such data would need to be forecast, which would reduce the reliability of the resulting composite indexes. A similar problem is that the wide range of economic data available on the national level is not available on the state level. Furthermore, much of the state economic data is not available on an historical basis. This fact further may handicap analysis of Nebraska business cycle fluctuations. The time series used for analysis of the Nebraska economy is only available through January 1970.

The composite index of coincident indicators for Nebraska consists of three individual series. These indicators include measures of the following data:

1) Nonfarm wage and salary employment;
2) Industrial electricity usage;
3) Real retail sales.

Figures for nonfarm wage and salary employment from the Bureau of Labor Statistics, U.S. Department of Labor provide a measure of employment in various sectors of the Nebraska economy. Data for industrial electricity usage are obtained from the Energy Information Administration and provide a measure of industrial production in the state. Figures for retail sales are from the advance report on sales tax from the Nebraska Department of Revenue. This series reflects statewide consumer buying power.

The coincident index is updated in several ways. First, the raw data for each individual time series are seasonally adjusted. Next, the series that are considered to be relatively volatile (for example, industrial electricity) are smoothed (adjusted by compiling a three month moving average). Next, the month-to-month changes are calculated. In this calculation, the symmetrical percent changes are computed, which allows for equal treatment of both positive and negative changes in the index components. The treatment is achieved using the average of the two months being compared as the base for the percent change, rather than just the second month. The resulting symmetric percent changes are standardized to prevent irregular movements from dominating the movements of the resulting composite index.

The results are standardized by dividing each individual symmetric percent change by the long-run average percent change in the whole series (the standardization factor) without regard to sign. The resulting standardized percent changes are used to construct each individual index. Depending on whether the series was smoothed, January or February 1970 is set at 100. The standardized percent changes are applied to each previous month's index measure.

After the three indexes for the standardized percent changes of the coincident indicators are calculated, the composite index of coincident indicators is created. Each individual index is weighted equally at one-third. The individual weighted indexes are summed to determine the composite standardized percent changes for the coincident indicators. Next, the average standardized percent change for this series is determined in the same manner as the standardization factor The average standardized percent change is used later to adjust the composite index of leading indicators to reduce its variability from the composite index of coincident indicators.

The composite standardized percent changes for the coincident indicators are smoothed using the three month moving average. The composite index of coincident indicators is created by applying the smoothed percent changes to the previous month, with March 1970 equal to 100. Finally, the index is shifted to a base year of 1977. Figure 1 shows the Nebraska composite coincident index. The index shows fairly steady growth between 1985 and mid-1988 and large gains at the end of 1988. Those gains were a result of the strength in the nonfarm employment and retail sales indexes.

Construction of the Leading Index for Nebraska

The composite index of leading indicators for Nebraska consists of five individual series:

Figure 1
Nebraska Composite Coincident Index

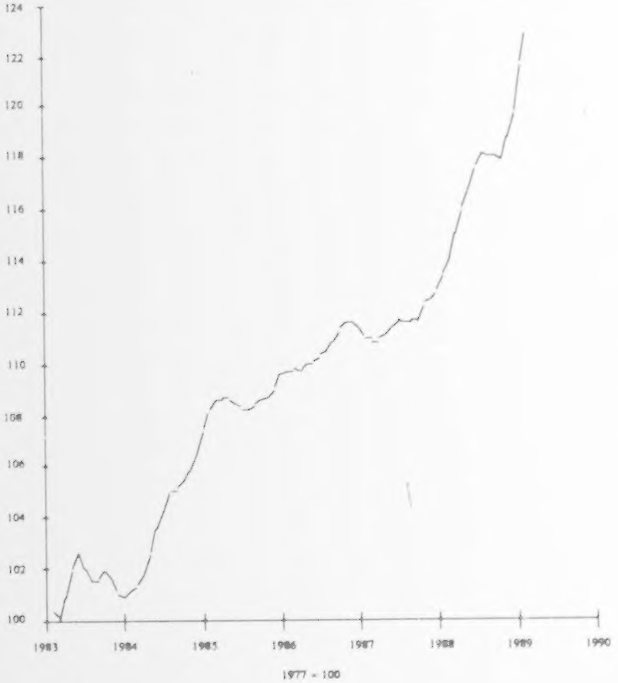
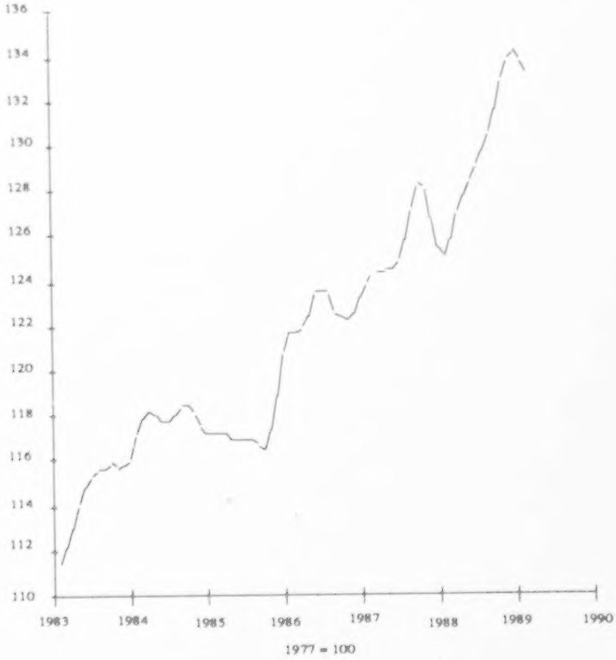


Figure 2
Nebraska Composite Leading Index



1) Initial claims for unemployment insurance (Nebraska Department of Labor);
2) Index of prices received for all ag products (National Agricultural Statistics Service and the Nebraska Department of Agriculture);
3) Index of prices of 500 common stocks (S&P 500, *Business Conditions Digest*);
4) Value of let construction contracts in Nebraska (*F.W. Dodge Construction Potentials Bulletin*);
5) Average weekly earnings in manufacturing (Nebraska Department of Labor).

The procedure used to construct the leading index is similar to the procedure for constructing the composite index. There are four differences in the process. First, the stock price index is not seasonally adjusted. Second, because there are five individual series to be combined, they are equally weighted by a factor of 0.2. Third, the composite standardized percent changes are adjusted (multiplied) by the ratio of the coincident average standardized percent change to the leading average standardized percent change. This step compensates for differences in variability between the two indexes. Finally, a trend of the leading index is made similar to that of the composite index by adding a trend adjustment factor to the smoothed standardized percent changes of the composite leading index. This trend adjustment factor, which is determined by trial and error, lies between 0 and 1 (currently .139) and is not changed often.

With compensation made for differences, the composite index of leading indicators is constructed by applying the smoothed percent change to the previous month with March 1970 equal to 100. Last, the index has been shifted to a base year of 1977. Figure 2 shows the recently updated Nebraska leading index. The index shows wider fluctuations than the coincident index. Its movements clearly precede those of the coincident index. The main inaccuracy of the index can be noted at the end of 1987. This was the time period surrounding the October stock market crash, a time when fears of a recession spread through the economy.

David W. Taylor is employed this summer with an insurance firm in Omaha.

Now Available

1988-1989 Nebraska Statistical Handbook

Nebraska's own almanac has just been released by the Department of Economic Development. These 313 pages contain information on climate, population, employment, income, agriculture, manufacturing, business, finance, insurance, transportation, communication, housing, education, health and welfare, government, recreation and tourism, and energy. To order your copy of the *1988-1989 Nebraska Statistical Handbook* (price $6.00), contact:

Nebraska Department of Economic Development
P.O. Box 94666
Lincoln, NE 68509

Capital Budgeting (continued)

Making decisions whether to expand a business or to replace equipment can be difficult. The underlying reason for considering such projects is to improve the financial condition of the firm. There are several capital budgeting methods used in the business community today, but many of these methods do not use the time value of money through proper discounting of projected future cash flows. The net present value method of capital budgeting follows this principle and improves the operation's long-term financial strength by analyzing capital expenditure opportunities.

Businesses across the state are incurring higher interest costs on capital investments. Lenders charge interest for several reasons:

1) Risk—Some loans may default;
2) Inflation—Funds loaned today will have lower purchasing power when paid;
3) Foregone earnings—Funds loaned could have been used for other productive purposes.

The above factors are logical from a lender's point of view. The same factors are important when considering investments in a business. A common cliche is that a dollar today is worth more than a dollar tomorrow. That simple statement describes one of the most important principles in finance: the time value of money. These same factors are also important when valuing future cash flows of a project.

Inflation reduces the purchasing power of the dollar received from projects. Because the value of a dollar is based upon what it will buy, tomorrow's dollars are of less value than today's. Another factor in the time value of money is risk. For example, with an investment in a parcel of land, there is no guarantee it will be a self-funding investment. Dollars expected in the future are less certain than dollars now. Thus, today's dollars are valued higher. Finally, investing in a capital item takes capital from other investment opportunities. By not accepting the latter investment, there is an opportunity cost. The opportunity cost is the foregone earnings that could have been achieved by investing in other projects.

Capital Budgeting Defined

Capital budgeting concerns setting criteria for investing in long-term projects. A majority of a business' profit often is made from its long-term investment projects. Therefore, it is important to have a proper system of evaluating opportunities. Some common examples of items that can be analyzed with capital budgeting procedures are land, buildings, equipment, and numerous other long-term capital investments.

There are several benefits from using the capital budgeting model. It is not a perfect system, however, and should not be followed blindly. If used properly, it will provide meaningful insight into the profitability of potential projects. An important point in capital budgeting analysis is that one is using cash flows that are expected from the project. There is no way of knowing whether these cash flows will occur—that risk must be considered when deciding the purchase of a capital item.

One of the most important goals of any business is to improve the value of the firm. The firm and society benefit when value increases. There are several capital budgeting techniques used throughout the business community; however, there is no technique that adheres as closely to the goals of improving the firm's value as net present value.

Cash Flows, not Income

Many businesses across the state have noticed an increased emphasis on cash flow statements as compared to income statements when talking to their bankers. Cash flows are the actual dollars that are received and spent, whereas net income is affected by noncash expense depreciation. Examining a project's cash flow is more relevant to the firm's profitability than is net income because the firm's value is based upon cash flow, not yearly income.

Caution should be used when assessing expected future cash flows. An example should clarify the relationship between income and cash flows. A machine costing $50,000 and having a useful life of five years will be depreciated by the straightline method to zero. The machine will increase income $40,000 per year and raise operating costs by $26,000 per year. There is a 15 percent federal income tax and a 13 percent Social Security tax.

	Change in Income Statement	Change in Cash Flow
Income	$40,000	$40,000
Less: Operating expense	$26,000	$26,000
Depreciation	$10,000	
Earnings before taxes	$4,000	
Less: Tax (28 percent)	$1,120	$1,120
Earnings after taxes	$2,880	
Increased cash flow		$12,880

Thus, cash flow is equal to net earnings after taxes plus depreciation. The time value of money concept should be implemented on the estimated cash flows. For example, if a truck is expected to develop cash flows as follows:

	Cash flow				
	t=1	t=2	t=3	t=4	Total
Truck	$20,000	$25,000	$25,000	$26,000	$96,000
Discount factor	$(1.1)^1$	$(1.1)^2$	$(1.1)^3$	$(1.1)^4$	
Present value*	$18,181	$20,661	$18,783	$17,758	$75,384

*to nearest dollar

It is possible to mistakenly value the truck's cash inflow as $96,000. But the dollars received in year 1 are valued higher than dollars in year 2. To determine the actual present value, the discounted cash flow formula must be used. This formula does just the opposite of compounding, as follows:

$$\text{Present Value} = \text{Cash Flow}/(1+r)^t$$

This formula means that the present value of a single amount equals the cash flow in year t divided by one plus the interest rate to the power of t. The variable t represents the number of years from now the cash flow will be received. The discounted cash flows for years 1 through 4 are stated in today's value. The present value of each cash flow can be summed on an equal basis. The true present value of the truck's cash inflow is $75,383.56.

The following example shows how the discounting technique can be used to help make choices between possible investments. Assume that the discount rate is 12 percent.

Project	Initial Investment t=0	Cash Flow t=1	t=2	t=3
Farrowing house	($60,000)	$16,000	$29,000	$50,000
Dairy barn	($60,000)	$50,000	$29,000	$16,000
Discount factor		$(1.12)^1$	$(1.12)^2$	$(1.12)^3$

Before a decision can be made on which project to accept, the net present value of both opportunities should be examined. The net present value (NPV) is equal to the present value of the future cash flows minus the cash flow in time 0 or initial cost. The NPVs of the farrowing house and dairy barn are $12,993.35 and $19,149.96, respectively.

Even though both investments have the same total cash flows, the dairy barn has a higher net present value due to the larger cash flows occurring earlier in the life of the project. Therefore, the dairy barn should be accepted over the farrowing house. It is important to keep in mind, however, that both projects would add value to the firm because of their positive NPVs.

Techniques to Avoid

Knowledge of the time value of money and the application of this principle are essential when performing capital budgeting analysis. But there are other methods that do not use this important principle. The first is the average return on average investment (ARAI). The ARAI method compares yearly after tax income with investment. After combining these two numbers in a ratio, a calculated percentage is compared with an established rate.

There are several problems with the ARAI method of capital budgeting. First, it does not use the time value of money. With ARAI, both the farrowing house and dairy barn from the previous example are considered equal; whereas when the time value of money is incorporated, the dairy barn's cash flows are valued more highly. Another problem is that the ARAI formula uses net income instead of cash flows. The final problem is that the ARAI does not necessarily lead to improvement of the firm's value. The problem develops because an established required rate can be set arbitrarily, which may or may not be the optimal rate.

Another commonly used capital budgeting method is the payback period rule. Payback ranks projects on the number of years that will elapse before the initial cost of the investment is recovered. Many business managers enjoy the ease of employing the payback rule. They know how long it takes to repay the initial investment and will accept only projects that meet their time constraint. But there are some serious problems that can develop with the payback method. First, the payback rule does not use the time value of money. Nor does it consider cash flows after the payback has been achieved. Thus, it rates short-lived projects too highly. Often projects develop slowly, but can be worth the wait.

Application of Capital Budgeting

In the examples used, the discount rate has been a given. Because the discount rate has a substantial impact on the net present value method of capital budgeting, it is important to select the discount rate properly. One common method is to apply the interest rate on the loan used to fund the project, adjusted for the tax shelter that interest expense provides:

Discount rate = Loan rate (1 - tax rate).

For example, if the bank's loan interest rate is 12.95 percent, the federal income tax rate is 15 percent, and the Social Security tax rate is 13 percent (a total tax of 28 percent), the discount rate would be 9.32 percent. Because interest expense is deductible as a business expense, only 72 percent of the loan's interest rate is incurred by the business. In some cases, no loan may be needed to finance the project. In such cases, the interest rate that would have occurred with a loan would be used for analysis.

The following example considers buying a combine to harvest corn to save custom combining expenses with a planning horizon of five years. The farm consists of 260 acres of irrigated corn that is expected to produce 130 bushels per acre per year for the next five years. Corn is expected to sell for $2.50 per bushel for the next five years.

A used combine costs $50,000 and will be depreciated straightline to zero and sold in five years for $10,000. It is expected that 5.0 percent more corn will be harvested by the owner than by a custom combiner. Annual repairs, insurance, and fuel will be $2,200.

For continued custom work, the fee would be $25 per acre. The loan's interest rate is 12.95 percent and the tax rate is 28 percent. Thus, the proper discount rate is 9.32 percent.

	Inflows:	Pre-tax Outflows:
Added harvest production	$ 4,225	
Annual maintenance expense		$2,200
Savings on custom work	$6,500	
Depreciation each year	$10,000	

Yearly cash flows for years 1 through 5 are as follows:

$(10,725 - 2,200)(1-.28)+10,000(.28) = 6,138+2,800 = \$8,938$

Therefore, on a time line, the cash flow stream (given an initial investment of $50,000) is as follows:

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
$8,938	$8,938	$8,938	$8,938	$8,938	$10,000

The net present value is calculated by discounting the cash flows to the present. The net present value is -$9,116.30. Therefore, the combine should not be purchased, as the net present value is negative.

Harold D. Peck, Jr. is from Coleridge, Nebraska. Harold received assistance in his research from Dr. Gordon Karels of the UN-L Department of Finance.

This paper is a condensed version of a more extensive article. If you are interested in the full text, please send a written request to the Bureau of Business Research.

Per Capita Income in Nebraska Counties

Per capita personal income figures by county for 1987 recently have been released by the Bureau of Economic Analysis and are presented in the table below. The range of per capita income is broad, running from $9,388 in Thurston County to $29,473 in Wheeler County. Per capita income in the metropolitan counties varies from a high of $15,832 for Douglas County (Omaha) to a low of $11,792 for Dakota County (South Sioux City).

For the state as a whole, Nebraska per capita personal income was $14,300, compared to a U.S. average of $15,482. Thus, Nebraska's 1987 per capita personal income is 92.4 percent of the national figure, a level roughly consistent with our state cost of living in comparison to the U.S. Consequently, Nebraskans' purchasing power from their earnings is approximately on par with national averages.

John S. Austin

Per Capita Personal Income

	1987	1987 Rank
United States	$15,482	—
Plains	14,784	—
Nebraska	14,300	—
Nebraska (Metro)	15,001	—
Nebraska (Nonmetro)	13,667	—
Lincoln, NE (MSA)	14,373	—
Omaha, NE-IA (MSA)	15,033	—
Sioux City, IA-NE (MSA)	13,926	—
Adams	14,206	40
Antelope	13,061	69
Arthur	16,812	9
Banner	18,581	5
Blaine	13,336	61
Boone	13,578	53
Box Butte	14,509	26
Boyd	11,852	84
Brown	14,172	42
Buffalo	12,247	81
Burt	14,846	24
Butler	14,383	32
Cass	12,928	75
Cedar	11,268	91
Chase	15,093	22
Cherry	12,461	78
Cheyenne	15,841	17
Clay	16,586	10
Colfax	13,048	70
Cuming	13,741	51
Custer	13,826	48
Dakota	11,792	86
Dawes	12,385	79
Dawson	13,047	71
Deuel	15,903	15
Dixon	11,963	83
Dodge	13,405	58
Douglas	15,832	18
Dundy	18,979	4
Fillmore	17,739	7
Franklin	14,469	27
Frontier	14,315	34
Furnas	15,227	21
Gage	13,565	54
Garden	19,122	3
Garfield	11,558	88
Gosper	16,436	12
Grant	13,290	62
Greeley	14,205	41
Hall	13,432	57
Hamilton	14,518	25
Harlan	14,073	44
Hayes	16,857	8
Hitchcock	$14,383	31
Holt	13,807	49
Hooker	11,314	90
Howard	12,123	82
Jefferson	14,451	28
Johnson	12,873	76
Kearney	15,887	16
Keith	14,224	37
Keya Paha	14,264	35
Kimball	18,018	6
Knox	11,103	92
Lancaster	14,373	33
Lincoln	13,764	50
Logan	15,522	20
Loup	11,699	87
Madison	13,016	72
McPherson	15,961	14
Merrick	12,962	73
Morrill	14,206	39
Nance	13,558	55
Nemaha	13,370	59
Nuckolls	13,128	67
Otoe	13,225	65
Pawnee	13,115	68
Perkins	22,268	2
Phelps	16,516	11
Pierce	13,866	47
Platte	13,337	60
Polk	15,800	19
Red Willow	13,245	64
Richardson	13,726	52
Rock	14,972	23
Saline	14,036	45
Sarpy	13,471	56
Saunders	12,791	77
Scotts Bluff	13,216	66
Seward	12,931	74
Sheridan	13,942	46
Sherman	12,299	80
Sioux	16,178	13
Stanton	13,272	63
Thayer	14,446	29
Thomas	11,799	85
Thurston	9,388	93
Valley	14,218	38
Washington	14,245	36
Wayne	11,506	89
Webster	14,439	30
Wheeler	29,473	1
York	14,131	43

Junk Bonds: Facts and Fantasies

Harold D. Peck, Jr.

Junk bonds have been one of the most talked about investments over the past several months. Recently, the spotlight has focused on the default rate of junk bonds. A study by Harvard's Paul Asquith finds that default rates are close to 34 percent for bonds issued in 1977 and retired in 1988. Asquith's research contrasts with previous works showing default rates of only 2 percent per year. These latter studies were sponsored by Wall Street investment firms. Asquith also recognizes that default rates increase as the maturity of a bond draws nearer. Further, Asquith states that as the junk bond market matures, a higher percentage of defaults may occur.

To shed further light on the controversy, this article examines the definition and possible future course of junk bonds.

Bonds commonly pay interest with the effective rate depending upon the purchase price and the stated or coupon interest rate. For example, zero coupon bonds pay no interest. Instead, they are sold at a deep discount when issued. Bonds can appreciate or depreciate in value. If interest rates increase, prices on existing bonds will decrease to keep their effective rate in line with current market rates. Bonds also can depreciate if their rating is lowered because of an increase in default risk.

Standard & Poor's and Moody's rate bonds based upon their likelihood of default. A widely accepted definition of junk bonds is a bond not rated in the top four grades of Standard & Poor's scale (BBB through AAA). Bonds not having these ratings are more risky because of a higher probability of default. Such bonds, however, also offer a higher yield.

A myth about junk bonds is that they are issued solely for leveraged buyouts (LBOs) by management groups in their efforts to take over a company. LBOs often use junk bonds, but junk bonds also are issued by companies that are not as financially stable as investment grade companies.

Over the past seven to eight years, junk bonds have been attractive for institutional investors and small investors through mutual fund arrangements. Mutual funds have appealed to small investors because they offer professional management and diversification. Junk bonds have become a more popular investment due to the economy's strength over the past seven years. Many economists predict a recession within the next 12 months. If a recession were to occur, it could have a devastating impact on the junk bond market. As the economy reaches its peak and begins to slide, some highly indebted corporations will find it difficult, if not impossible, to make their interest payments.

Some statistics show that junk bonds offer extra return over and above the associated risk. There are several arguments against such conclusions. In efficient capital markets, such as the United States, competition is keen. Investors receive returns equal to the dollar amount paid. If there were extra returns above the normal risk premium, investors would be willing to buy these bonds at higher prices. Thus, the extra return would disappear within minutes.

There are some factors to be considered before investing in junk bonds:

1. Be willing to accept volatile bond prices.
2. Consider the state of the economy. If the economy continues to grow, junk bonds may prosper.
3. Look at the possibility of a high yielding bond fund instead of a single junk bond for diversification.

Women in the Labor Force

Rebecca S. Cox

The increased participation of women in the U.S. job market has changed the composition of today's workforce. Although the ratio of women to men age 55 and over has increased from two of ten workers in 1950 to four of ten workers in 1988, the participation rate of older women in the job market has remained nearly unchanged.

The participation rate is defined as the percentage of a particular category who are in the labor force. The labor force includes those who are employed and those who are actively seeking employment.

In 1967, the participation rate for women 65 and over was 9.6 percent. The rate decreased to 7.4 percent in 1987. The increased ratio of women to men can be explained by the decrease in the participation rate for men. For men 65 and over, the rate decreased from 27.2 percent in 1967 to 16.3 percent in 1987. For women 55 to 64 years, the participation rates were unchanged from 1967 to 1987. During the same period, the rate for men in the same age group dropped from 84.4 percent to 67.6 percent. The decrease in participation by men can be attributed to increased early retirement.

The most significant increase in the participation rate for women appears in the 25 to 54 age category. In 1967, the rate for women in this category was 47.3 percent; by 1987, the rate increased to 71.9 percent. The reason for the dramatic increase may be explained by differences in attitudes and by the education levels of women in the various age groups.

In 1987, two-thirds of working women over 55 were employed in a traditional female jobs: sales, administrative support (including clerical), and services. One-half of women ages 25 to 34 were employed in these traditional jobs. Although younger female workers are shifting toward formerly male-dominated jobs, there also has been an increase in the number of women involved in traditionally female-dominated occupations such as nursing and clerical jobs.

Several factors affect the proportion of older women in occupations. Factors include past opportunities, earnings, retirement income, health status, and marital status. Marital status has a substantial impact on the participation of older women. Older women that are married with a husband present are less likely to work than their divorced or never married counterparts. In 1987, 69.9 percent of divorced women age 55 to 59 worked, while 44.9 percent of married women age 55 to 59 worked outside the home

Rebecca Cox is an undergraduate research associate who has contributed previously to Business in Nebraska.

Review and Outlook

The National Economy

The long expansion of the 1980s continues, as shown by data released from the Bureau of Economic Analysis (BEA). A revision of the first quarter 1989 GNP estimate reduced the expansion of GNP from the preliminary 5.5 percent to 4.3 percent. Many economists view the revised report as positive. Prior to the announcement, many believed that the economy was expanding too rapidly. Slow growth rates could allow a soft landing for the U.S. economy.

When the impact of last year's drought is removed from the first quarter numbers, the expansion was a modest 1.8 percent. Evidence that the economy is slowing is becoming somewhat more clear. The second quarter shows continued expansion, despite the mixed signals given by the economy. GNP growth in 1989 as a whole may be better than the current consensus forecast of 2.8 percent.

Industrial production in April grew 0.4 percent. Retail sales in that month grew the same percentage as did personal income. Some analysts were disappointed that retail sales did not increase faster, especially in the auto sector. Once again, major auto producers had to offer incentive programs to move stocks of automobiles. Incentives resulted in only a small increase in sales. Auto sales in 1989 are forecast to be no better than in 1988. Part of the reason for that forecast is that the stock of autos held by the public has become newer due to several years of high sales volume. Sales of light trucks and autos were 15.5 million units in 1988, compared with 10.2 million units in 1982.

April inflation reports were reassuring. The Producer Price Index expanded 0.4 percent, while the Consumer Price Index expanded 0.7 percent. The latter increase would be reduced to 0.2 percent if food and energy prices were removed. Inflation has not permeated outside the food or energy areas at this time.

A major factor behind the good news on inflation is that the Federal Reserve has maintained a fairly stable monetary policy the last few months. The federal funds rate has remained 9.5 to 10.0 percent since the beginning of the year.

Aiding the economy in 1988 was an expansion in capital goods investment in this country. Most of the capital goods expansion was in equipment rather than producers' structures. The expansion in capital goods in 1988 has been characterized as one of improving at the margin rather than massive new projects.

The recent report on inflation was especially surprising in light of changes in energy prices. Retail gasoline prices appeared to have reached a plateau toward the end of May. Memorial Day price increases once again advanced retail prices of gasoline. Wholesale prices for gasoline and for crude products decreased from the peaks reached in April. West Texas intermediate crude peaked at the end of April at $21.40 per barrel. That price dropped to $19 on wholesale markets by the end of May. Furthermore, wholesale gasoline prices have decreased. The wholesale price for NY unleaded regular peaked at $.7575 per gallon at the end of April. It is currently some 6 cents lower. OPEC production has been approximately 3.5 million barrels a day above the quota of 18.5 million barrels. Worldwide demand has been high enough so that the OPEC producers have not been harmed by their excessive production. Retail gasoline prices may not drop until autumn.

If a drought occurs again in the Midwest, food prices will increase. Recent reports indicate that the nation's cattle herd is the smallest since 1961. Ranchers have sent a large number of cattle to feedlots, including some breeder stock. Thus, meat prices could decrease in the short run, but in the longer run will increase as a shortage of fed cattle is felt. The huge excesses in grain markets for the last several years have been reduced substantially by increased exports and limited supplies last year. A second drought year may lead to much lower inventory levels and higher agricultural product prices.

In 1988, nearly one-fifth of GNP growth was due to net exports being less negative than they were in 1987. Substantial improvement in GNP came from a capital goods boom. The low value of the dollar throughout last year helped to stimulate grain exports. The recent climb in the dollar is foreboding for export markets.

A typical lag in the response of product flows to changes in the value of the dollar would be three to six months. This implies that 1989 probably will not suffer a deterioration in net exports. A worsening trade balance could occur, however, if the upward spiral of the dollar is not reversed.

Rising imports would hurt the net export situation. A substantial part of our imports are automobiles, especially from

Table I
National Indicators

	Annual		Quarterly (SAAR)			
	1987	1988	1988:II	1988:III	1988:IV	1989:I
Real GNP (percent change)	3.4	3.9	3.0	2.5	2.4	4.3
Real Consumption (percent change)	2.7	2.8	3.0	3.9	3.5	1.1
Housing Starts ($ millions)	1.6	1.5	1.5	1.5	1.5	1.5
Auto Sales ($ millions)	10.3	10.6	10.6	10.6	10.5	9.7
Interest Rate (90 day T-bill)	5.8	6.7	6.2	7.0	7.7	8.5
Unemployment Rate (percentage)	6.2	5.5	5.5	5.5	5.3	5.2
Industrial Production Index (1977=100)	129.8	137.2	136.0	138.4	139.8	140.7
Money Supply, M2 (percent change)	6.5	5.1	7.7	3.7	3.0	2.0

Note: SAAR—Seasonally Adjusted at Annual Rates

Japan. The Japanese recently have declared new voluntary quotas. But with production of Japanese cars in this country, coupled with the prospects for lower overall sales, the Japanese can maintain or increase their share of the American market without expanding exports to the U.S.

Another major component of imports is capital goods and industrial supplies. Whether these will expand are related to two factors: the relative price of these items and the level of investment in capital goods in our country. Should the economy slow in 1990, it is reasonable to expect that capital goods investment likely will contract in 1990.

Net exports commonly turn positive in recessions. Exports expand rapidly toward the end of the business cycle peak, while imports tend to fall somewhat. Reasons for all these movements would call for considerable analysis beyond the scope of this article. The trade numbers for March were positive and are reassuring that net exports are not a major problem this year.

The unemployment rate rose slightly in April to 5.3 percent, but fell to 5.2 percent in May. The labor market appear healthy, although unemployment in April and May was above the March level.

Mortgage rates fell in April and early May, a possible indication that the expected drop in housing starts may not be as severe as projected earlier. New house sales increased 10.9 percent in April, but remain below year ago levels on a year-to-year basis.

Consumer spending increased 1.1 percent in April, while personal income rose 0.4 percent. The savings rate dropped.

Machine tool orders were down through April, but order backlogs were 61 percent ahead of year ago levels. Such backlogs would allow continued high production levels. Should a major recession begin, however, orders will be cancelled and the backlog will disappear quickly.

First quarter GNP revisions show that overall inventory levels were less than estimated previously. Analysts describe inventories as lean and mean. That is good news for the economy as a whole, as excessive inventories followed by production cutbacks often are associated with the start of a major downturn.

Nebraska Economy

The outlook for the Nebraska economy is related closely to the outlook for net farm income. The drought that is affecting our state implies that net farm income in 1989 may be reduced somewhat. Professor James R. Schmidt estimates that net farm income will fall about 5.0 percent in 1989 from 1988. Although net farm income is a small part of the total income in our state, it is a big part of the change in income in Nebraska. Nonfarm income tends to grow fairly steadily.

The concept of net farm income may understate the effect of agriculture on our state. Net farm income is gross receipts minus total costs. The issue is what these costs represent. A typical farmer will have expenditures to the local elevator, to feed suppliers, to the agricultural, chemical, and fertilizer industries, to implement dealers, to car and truck dealers, and so forth. A better concept to assess the impact of agriculture upon the state may be gross receipts.

In the nonfarm sectors, continued growth in jobs and employment is foreseen. Nebraska's April unemployment rate was 2.8 percent, versus the national unemployment rate of 5.3 percent. Lincoln had an unemployment rate of only 2.3 percent, considered by some to be comprised mostly of only job changers. The Omaha rate of unemployment was 3.2 percent, while nonmetropolitan Nebraska's was 2.9 percent. We expect that nonfarm Nebraska income will follow national trends showing slower growth in 1989 and 1990 than in 1988. On the whole, the

Table II
Employment in Nebraska

	Revised March 1989	Preliminary April 1989	April % Change vs. Year Ago
Place of Work			
Nonfarm	701,870	710,422	3.9
Manufacturing	97,385	97,508	5.3
Durables	47,497	47,564	3.4
Nondurables	49,888	49,944	7.1
Mining	1,395	1,657	1.1
Construction	23,414	25,776	8.4
TCU*	46,756	47,304	7.6
Trade	180,577	183,057	3.8
Wholesale	51,513	52,508	5.2
Retail	129,064	130,549	3.3
FIRE**	48,579	48,745	2.2
Services	163,135	164,933	4.6
Government	140,629	141,442	1.0
Place of Residence			
Civilian Labor Force	811,862	816,855	1.1
Unemployment Rate	3.5%	2.8%	

*Transportation, Communication, and Utilities
**Finance, Insurance, and Real Estate

Source: Nebraska Department of Labor

Table III
Price Indices

	April 1989	% Change vs. Year Ago	YTD % Change vs. Year Ago
Consumer Price Index - U* (1982-84 = 100)			
All Items	123.1	5.1	4.9
Commodities	116.7	5.4	4.9
Services	130.2	4.9	4.9
Producer Price Index (1982 = 100)			
Finished Goods	113	5.7	5.3
Intermediate Materials	112.3	6.4	6.4
Crude Materials	104.1	8.8	8.3
Ag Prices Received (1977 = 100)			
Nebraska	158	11.3	15.1
Crops	138	36.6	43.4
Livestock	171	1.8	4.5
United States	146	12.3	13.6
Crops	138	24.3	24.0
Livestock	154	4.1	6.6

U* = All urban consumers
Source: U.S. Bureau of Labor Statistics

Nebraska economy appears to be fairly robust. Growth in 1988 sales tax receipts may have been related to the sharp increases in net farm income over the past few years; therefore, sales tax growth is likely to slow in 1989 and 1990.

John S. Austin

Voter Turnout Down Again-- A Look at 1988 Voter Participation

David W. Taylor

According to the Census Bureau, 57.4 percent of the U.S. voting age population exercised their right to vote in last year's presidential election. That turnout represents a steady decrease since 1964 and the lowest recorded percentage since data first were collected. The 1988 participation rate decreased from 59.9 percent in 1984 and 69.3 percent in 1964.

Voter turnout fell for all age groups except those 65 years and older. Those 65 years and above had a 1988 participation rate of 68.8 percent. That figure is in line with previously reported participation rates for this age group. The youngest age group of voters had the lowest participation rate, 36.2 percent in 1988. Despite efforts to increase participation among younger voters, their participation rates have dropped since 1964.

As the level of education increases, the rate of voter turnout increases. Statistics show 54.7 percent of those attending four years of high school voted, while 77.6 percent of those attending four years of college voted.

Employment status also has a marked effect on voter participation—57.5 percent of those employed in the civilian labor force voted, compared to 38.6 percent of the unemployed.

The percent of voting age Nebraskans who voted (63.5 percent) compares favorably to the percentage recorded for the nation (57.4 percent). Nebraska's percentage was close to that of the Plains states (66.7 percent), especially that of Iowa (63.4 percent).

Table IV
City Business Indicators
February 1989 Percent Change from Year Ago

The State and Its Trading Centers	Employment (1)	Building Activity (2)
NEBRASKA	1.9	34.8
Alliance	2.2	176.4
Beatrice	2.2	55.4
Bellevue	10.9	24.6
Blair	10.9	1,429.8
Broken Bow	0.9	-50.2
Chadron	0.8	-49.2
Columbus	4.2	263.1
Fairbury	3.2	316.8
Falls City	1.4	626.8
Fremont	1.8	42.3
Grand Island	3.2	39.0
Hastings	1.0	-5.1
Holdrege	2.4	-69.7
Kearney	0.8	26.0
Lexington	2.7	55.4
Lincoln	2.2	18.0
McCook	3.2	7.4
Nebraska City	1.7	108.9
Norfolk	3.1	-11.9
North Platte	1.5	48.8
Ogallala	1.8	2.2
Omaha	1.9	33.3
Scottsbluff/Gering	2.0	-0.5
Seward	1.0	27.5
Sidney	0.2	30.5
South Sioux City	2.4	492.9
York	1.2	-42.4

(1)As a proxy for city employment, total employment (labor force basis) for the county in which a city is located is used

(2)Building activity is the value of building permits issued as a spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Cost Index is used to adjust construction activity for price changes

Sources: Nebraska Department of Labor and reports from private and public agencies

Figure I
City Business Index
February 1989 Percent Change from Year Ago

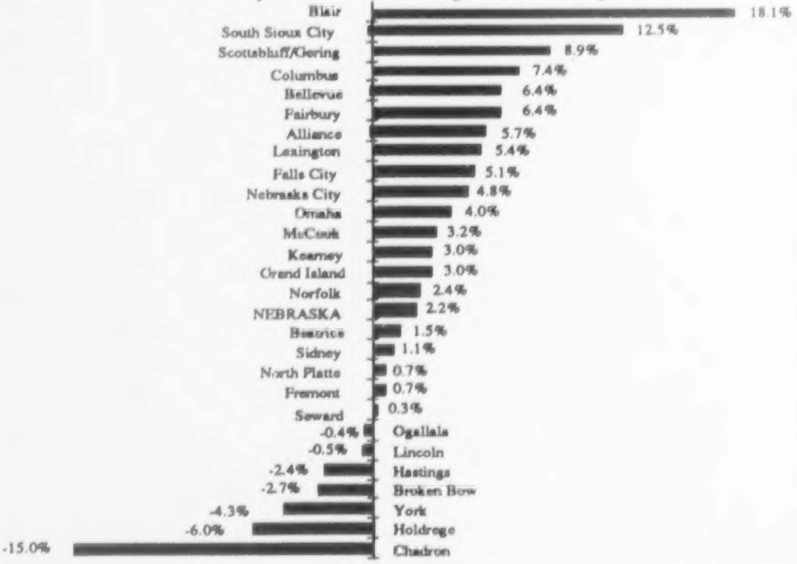
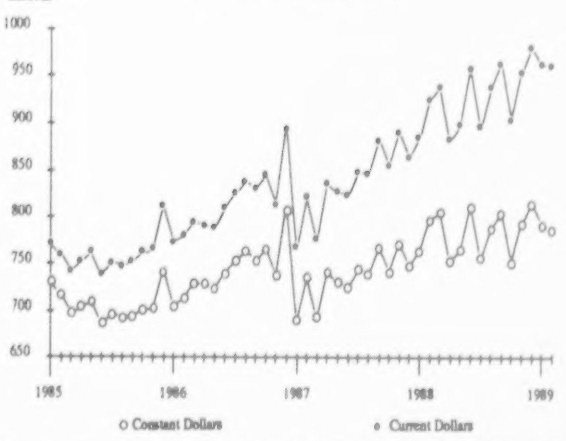


Table V
Net Taxable Retail Sales of Nebraska Regions and Cities

Region Number and City (1)	City Sales (2) Feb. 1989 (000s)	City Sales (2) % Change vs. Year Ago	Region Sales (2) Feb. 1989 (000s)	Region Sales (2) % Change vs. Year Ago	YTD % Change vs. Year Ago
NEBRASKA	$708,644	4.6	$805,568	4.1	6.5
1 Omaha	253,391	8.8	306,550	6.9	7.5
Bellevue	9,916	5.9	*	*	*
Blair	3,785	5.1	*	*	*
2 Lincoln	93,588	-0.6	107,055	0.0	3.8
3 South Sioux City	3,712	11.3	5,195	6.5	-12.4
4 Nebraska City	3,162	6.1	14,345	0.4	6.0
6 Fremont	12,638	0.4	22,997	-3.4	1.6
West Point	2,197	9.0	*	*	*
7 Falls City	1,584	-7.3	7,266	-1.5	-0.7
8 Seward	3,326	1.7	11,689	-2.6	2.6
York	5,273	-0.4	12,501	6.8	12.0
10 Columbus	12,196	3.2	22,601	5.6	7.9
11 Norfolk	15,347	8.5	28,306	7.1	9.2
Wayne	2,380	6.1	*	*	*
12 Grand Island	27,363	4.7	38,604	5.1	10.1
13 Hastings	12,917	-1.3	21,058	1.6	13.2
14 Beatrice	6,368	1.1	14,529	-1.2	1.8
Fairbury	2,177	0.2	*	*	*
15 Kearney	15,770	8.3	22,094	8.3	14.7
16 Lexington	5,289	9.6	13,593	8.9	11.6
17 Holdrege	3,485	1.7	6,490	4.6	7.6
18 North Platte	11,783	0.2	14,951	-0.2	4.2
19 Ogallala	4,617	1.7	10,172	13.6	19.0
20 McCook	6,198	8.2	8,911	4.1	11.3
21 Sidney	3,156	4.1	6,435	-1.9	3.8
Kimball	1,377	-8.9	*	*	*
22 Scottsbluff/Gering	14,200	23.7	20,246	1.0	9.7
23 Alliance	4,539	4.4	11,388	4.9	5.5
Chadron	2,221	-23.8	*	*	*
24 O'Neill	3,121	2.3	10,676	8.4	16.9
Valentine	1,903	-3.3	*	*	*
25 Hartington	1,117	-14.1	6,685	-4.5	4.9
26 Broken Bow	2,760	5.5	9,397	3.1	10.5

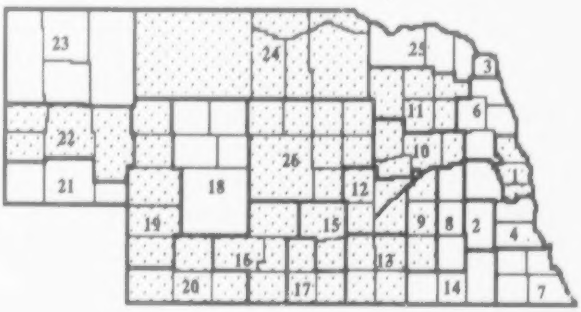
(1) See region map
(2) Sales on which sales taxes are collected by retailers located in the state. Region totals include motor vehicle sales
* Within an already designated region
Compiled from data provided by the Nebraska Department of Revenue

Figure II
Nebraska Net Taxable Retail Sales
(Seasonally Adjusted)



(1) The Consumer Price Index (1982-84 = 100) is used to deflate current dollars into constant dollars

Figure III
Region Sales Pattern
YTD as Percent Change from Year Ago



Shaded areas are those with sales gains above the state average. See Table V for corresponding regions and cities

Scoreboard

Percent change from same month one year ago

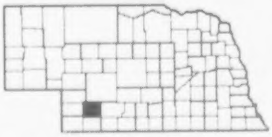
	State	Metro+	Nonmetro
Motor Vehicle Sales (Feb.) Constant $	↓ -4.5%	↓ -6.5%	↓ -2.9%
Nonmotor Vehicle Sales (Feb.) Constant $	↓ -0.2%	↑ 1.0%	↓ -1.4%
Building Activity (Feb.) Constant $	↑ 35.1%	↑ 22.7%	↑ 59.8%
Employment (Apr.)	↑ 1.8%	↑ 1.9%	↑ 1.6%
Unemployment Rate* (Apr.)	↓ 2.8%	↓ 2.8%	↓ 2.9%

+Omaha and Lincoln

*Unemployment is this month's rate, not a percent change from year ago

County of the Month

Hayes



Size of county: 711 square miles, ranks 40th in the state

Population: 1,300 (estimated) in 1987, a change of -2.9 percent from 1980

Median age: 33.0 years in Hayes County, 29.7 years in Nebraska in 1980

Per capita personal income: $16,857 in 1987, ranks 8th in the state

Net taxable retail sales ($000): $1,991 in 1988, a change of -0.8 percent from 1987; $402 during January-February 1989, a change of +32.7 percent from the same period one year ago

Number of business and service establishments: 26 in 1986; 80.8 percent had less than five employees

Unemployment rate: 1.5 percent in Hayes County, 4.9 percent in Nebraska for 1987

Nonfarm employment (1988):

	State	**Hayes County**
Wage & salary workers	659,223	151
	(percent of total)	
Manufacturing	13.3%	7.9%
Construction and Mining	3.9	*
TCU	6.5	*
Retail Trade	18.7	9.3
Wholesale Trade	7.1	5.3
FIRE	7.3	*
Services	22.7	*
Government	20.5	66.2
Total	100.0%	100.0%

*Data not available because of disclosure suppression

Agriculture:

Number of farms: 317 in 1987, 328 in 1982

Average farm size: 1,273 acres in 1987

Market value of farm products sold: $53.0 million in 1987 ($167,273 average per farm)

Sources: U.S. Bureau of the Census, U.S. Bureau of Economic Analysis, Nebraska Department of Labor, Nebraska Department of Revenue

Merlin W. Erickson

Business in Nebraska

PREPARED BY BUREAU OF BUSINESS RESEARCH
Association for University Business & Economic Research

Business in Nebraska is issued as a public service and mailed free of charge upon request to 200 CBA, University of Nebraska-Lincoln, Lincoln, NE 68588-0406. Copyright 1989 by Bureau of Business Research, University of Nebraska-Lincoln.

June 1989, Volume 44 No. 537

University of Nebraska-Lincoln-- Martin Massengale, *Chancellor*
College of Business Administration--Gary Schwendiman, *Dean*

Bureau of Business Research
F. Charles Lamphear, *Interim Director*
James R. Schmidt, *Acting Associate Director*
Merlin W. Erickson, *Research Associate*
Margo Young, *Editorial Assistant*
John S. Austin, *Statistical Coordinator*
David D. DeFruiter, *Information Systems Coordinator*
Jodi Benson, *Staff Secretary*
Barbara Sumsion, *Composing Technician*

The University of Nebraska-Lincoln does not discriminate in its academic, admission, or employment programs and abides by all federal regulations pertaining to same.

Nonprofit Org.
U. S. Postage
PAID
Lincoln, Nebraska
Permit No. 46

CONGRESSIONAL INFO SERVIC270238
SRI ER
4520 EAST-WEST HWY
BETHESDA, MD 20814

U7860-1

Business In Nebraska

July 1989
Vol. 44 No. 538

Prepared by the Bureau of Business Research
200 College of Business Administration
University of Nebraska-Lincoln
Lincoln, NE 68588-0406
402/472-2334

A Comparison of Economic Growth in Nebraska and the Plains

James R. Schmidt
Associate Professor
Department of Economics

Rebecca (Cox) Hofrock
Undergraduate Research Associate
Bureau of Business Research

The Plains states have exhibited moderate economic growth over the past 25 years. Minnesota has been the leader, while Nebraska has fallen in the middle of the pack. Nebraska led the region in farm income growth and in farm gross product growth, but displayed lackluster performance in the nonfarm area. Indeed, Nebraska's strong farm sector prevented the state from finishing toward the bottom of the region in several broad economic categories. Recent efforts to stimulate nonfarm industries are a direct response to this record.

The position of Nebraska's economy relative to those of neighboring states is an important element in assessing the state's past performance and future directions. Differences in historical growth patterns among states within a region provide signals to individuals and firms that help determine locational preferences. Whether the legacy of growth in a state is dynamic, moderate, or sluggish is a major determinant of whether development aspirations for the future are within reason.

Growth records are determined by many local factors, including resource endowments, degrees of specialization in various industrial activities, labor force skill levels, and public infrastructure. National and international influences determine the general paths of state economies within constraints represented by local characteristics. A substantial part of the credit (or blame) for economic trends that may exceed (or fall short of) those of neighboring states can not be assigned.

The Plains region consists of Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota. Although other state groups may be of interest, the choice of the Plains region for this study was not arbitrary. The Plains region is one of the standard state groups used by the Bureau of Economic Analysis (BEA) of the U.S. Department of Commerce. All data used in this article are from BEA. On the basis of these data, comparisons are made for a set of broad economic indicators that consists of gross state product, income, and employment. Data from a quarter century time span are used to emphasize long-term trends.

The region tends to lag the nation in overall growth. When the relatively slow growth of population is considered, however, per capita measures of growth put the region and Nebraska on par with national growth rates. Although relative gaps in

State Economic Scoreboard

Change from same month one year ago.
See Review and Outlook on page 9 for more details.

	State	Metro+	Nonmetro
Motor Vehicle Sales (March) Constant $	↓ -3.6%	↓ -5.8%	↓ -1.7%
Nonmotor Vehicle Sales (March) Constant $	↑ 4.1%	↑ 6.1%	↑ 2.2%
Building Activity (March) Constant $	↑ 13.2%	↑ 4.8%	↑ 28.6%
Employment (May)	↑ 0.8%	↑ 1.2%	↑ 0.4%
Unemployment Rate* (May)	↓ 2.5%	↓ 2.6%	↓ 2.5%

+Omaha and Lincoln. *Unemployment is this month's rate, not a percent change from year ago.

Table 1
Average Annual Growth Rates of Real Gross State Product
1963-1986 (in percent)

Industry	Iowa	Kansas	Minnesota	Missouri	Nebraska	North Dakota	South Dakota	Plains	U.S.
Farming	3.2	4.3	2.9	2.3	5.5	5.1	3.6	3.0	1.8
Agricultural Services	1.4	1.2	2.3	2.5	2.1	3.5	1.5	1.8	2.7
Mining	0.1	-4.7	-1.5	3.2	-7.5	2.9	4.4	-2.7	0.6
Construction	-2.6	-0.9	-1.3	-1.4	-2.3	0.0	-2.4	-1.6	0.0
Durables-Mfg	4.9	4.6	6.6	4.1	5.9	11.8	9.2	5.1	3.6
Nondurables—Mfg	3.4	3.8	3.8	2.8	3.8	6.6	3.9	3.4	2.9
TCU*	2.1	3.5	3.2	2.9	3.4	3.1	3.1	3.0	3.7
Wholesale Trade	3.5	5.1	4.6	3.1	4.2	4.0	3.3	3.9	4.5
Retail Trade	1.6	2.5	3.3	2.9	2.1	1.7	2.0	2.6	3.4
FIRE**	2.3	3.0	3.6	2.9	2.8	3.2	2.8	3.0	3.7
Services	3.1	4.0	4.3	3.7	3.5	4.0	3.5	3.8	4.4
Government	2.3	2.2	2.5	1.8	1.7	3.9	0.8	2.1	1.9
Total GSP	2.3	2.3	3.4	2.6	2.6	2.7	2.2	2.7	3.0
Per Capita GSP	2.2	1.9	2.6	2.0	2.3	2.5	2.2	2.2	1.9
GSP Per Employee	1.0	0.4	0.8	0.7	0.8	1.2	1.2	0.8	0.5

*Transportation, Communication, Utilities
**Finance, Insurance, and Real Estate

various economic measures have been fairly stable over the past two and a half decades, the absolute gaps have widened. Maintaining parity in growth is important. Closing the absolute gaps will require renewed efforts, changing directions, and perhaps some good luck as well.

Gross State Product

Gross State Product (GSP) is the gross market value of goods and services produced by the land, capital, and labor utilized within a state. It is the most comprehensive measure of economic activity at the state level, and it is the state analog of the U.S. Gross National Product. Although the concept of GSP has been recognized by regional economists for some time, BEA only recently has calculated and released official GSP figures for all states. Prior to the federal release, most states had prepared their own estimates of GSP. The official BEA GSP figures are consistent across states and allow interstate comparisons of economic growth and performance. Unfortunately, the BEA figures are only available through 1986. The comprehensive character of the GSP measure, however, outweighs any shortcomings in timeliness.

Table 1 contains the average annual growth rates of GSP by industry in the Plains states from 1963-1986. Growth rates for the region and the U.S. also are given, as are growth rates for total GSP, per capita GSP, and GSP per employee. The GSP data from which the rates are computed are in real terms, i.e., the effects of price inflation in the industries have been removed. All the growth rate figures in Table 1 and in subsequent tables of this article are average annual growth rates. It is important to keep in mind when analyzing these comparisons that the rankings of average rates can change if a state or group of states has an unusually good or bad year.

Although the emphasis is upon growth rates over a lengthy span of time, some perspective of the sizes of the state economies is gained by noting the GSP levels in real terms for the terminal year 1986. For the Plains region, GSP reached $261.2 billion in 1986. The GSP totals (and percent of the Plains total) for the region were: Iowa, $40.4 billion (15.5 percent); Kansas, $37.8 billion (14.5 percent); Minnesota, $68.1 billion (26.1 percent); Missouri, $72.6 billion (27.8 percent); Nebraska, $23.7 billion (9.1 percent); North Dakota, $9.8 billion (3.8 percent); and South Dakota, $8.8 billion (3.4 percent). The relative position of Nebraska's GSP in the Plains region has remained virtually unchanged since 1963.

Farming is the first industry listed in Table 1. Nebraska's growth rate of 5.5 percent in farm gross product led the region. Farming is the only industry in which Nebraska's growth rate topped the states in the region. North Dakota's growth rate in farming of 5.1 percent closely followed that of Nebraska, while Missouri trailed at 2.3 percent. Gross product in the farm sector has been extremely volatile over the past quarter century, making summary measures of growth over the period sensitive to episodes of boom and bust.

The growth rate of total GSP in the Plains region of 2.7 percent was slightly below the 3.0 percent growth rate of the nation over the period. Nebraska's GSP growth rate of 2.6 percent rate placed the state in the middle of the region. Minnesota's 3.4 percent rate was the only growth rate in the region that exceeded the national rate. South Dakota had the lowest growth rate (2.2 percent) for the study period. Although the differences in growth rates among the states may seem miniscule, the rates are averages from the period 1963-1986. Thus, minor differences in the average annual rates reflect substantial widening in the differences of gross product totals across states and with respect to the nation. The Plains region gross product has not kept pace with that of the nation over the period.

When growth in GSP is measured on a per capita basis, all the Plains states except Kansas outperformed the U.S. rate of 1.9 percent over the period. Population growth in each of the Plains states lagged that of the U.S. by a degree sufficient to offset the state growth rates in production values that had lagged the U.S. rate. In relation to the other Plains states, Nebraska finished third on the per capita basis, the same relative position as the total gross product measure.

Farming was Nebraska's only industry that led all other states in the region in average annual growth rate of gross product. At the other end of the spectrum, Nebraska's mining industry suffered the worst decline of any industry in the region over the period. That downturn reflects the peak of the Nebraska oil and gas sector (classified in the mining industry) in the 1960s and a subsequent nosedive in annual production values. Construction in Nebraska also suffered a substantial decrease at an average annual rate of 2.3 percent.

The remaining industries in Nebraska all had positive growth over the period, with durables manufacturing posting the highest average annual rate of 5.9 percent. This rate placed Nebraska fourth among the seven states. North Dakota led in durables manufacturing with a staggering growth rate of 11.8 percent.

The second highest growth industry in Nebraska was farming, followed by wholesale trade in third position with a growth rate of 4.2 percent for the period. Kansas and Minnesota surpassed Nebraska in wholesale trade, as did the U.S. Nondurables manufacturing was the fourth fastest growing industry in Nebraska with a rate of 3.8 percent.

Services mustered a fifth place finish with a 3.5 percent growth rate. Only Iowa had a lower growth rate than Nebraska in the services industry. Minnesota bested the region in services with a 4.3 percent growth rate, but this performance was below the U.S. rate. The Nebraska industry with the slowest positive growth was government at 1.7 percent. Only South Dakota had a lower rate of growth in government.

In summary, Nebraska was in the middle of the Plains states in gross product growth rates for the 1963-1986 period. Nebraska excelled in the farming industry, but suffered a dramatic long-term decline in the mining industry. Minnesota stands out as the clear leader in the region in growth of gross product over the past quarter century. A pattern of strength across industries, with the exception of construction and mining, is apparent in Minnesota's performance during the period.

In many ways, Minnesota does not have the general characteristics of a Plains state. While it does have a large agricultural sector, its nonagricultural mix is more like that of an industrial state. Furthermore, Minnesota has a significant amount of high tech and financial businesses. Minnesota is the only Plains state with major metropolitan areas, except Missouri. Minneapolis-St. Paul and St. Louis, Missouri have populations that exceed two million persons.

Real Personal Income and Population

Personal income is another broad indicator of a region's economic health. The major components of personal income are labor compensation; proprietors' income; dividends, interest, and rent; and transfer payments. Personal contributions to social insurance are deducted from the total. Corporate profits are not included, because they can not be assigned to individuals. As in the GSP comparisons above, the personal income data are in real terms. Conversion to real terms using the Consumer Price Index removes the effects of inflation. Personal income figures are available through 1988.

Table 2 contains the average annual growth rates of several income measures and population over the 1963-1988 period for the states in the Plains region, the region as a whole, and the U.S. On the basis of growth in total personal income, Minnesota again leads the region by a substantial margin. Minnesota's growth rate of 3.2 percent on an annual basis is .5 percentage point above that of Kansas and Missouri. Nebraska lagged the trio with a 2.5 percent rate, again ranking in the middle of the region (as was the case with growth in GSP). All the state growth rates fell short of the 3.3 percent mark of the U.S. Thus, the region's income growth lost ground compared to the nation.

Table 2
Average Annual Growth Rates of Real Income and Population
1963-1988 (in percent)

	Iowa	Kansas	Minnesota	Missouri	Nebraska	North Dakota	South Dakota	Plains	U.S.
Total Personal Income	2.1	2.7	3.2	2.7	2.5	2.3	2.2	2.7	3.3
Nonfarm Personal Income	2.5	2.8	3.4	2.9	2.5	2.9	2.7	2.9	3.3
Population	0.1	0.5	0.8	0.6	0.3	0.1	0.0	0.5	1.1
Per Capita Personal Income	2.0	2.3	2.4	2.1	2.2	2.2	2.2	2.2	2.2

Table 3
Average Annual Growth Rates in Employment
1969-1987 (in percent)

Industry	Iowa	Kansas	Minnesota	Missouri	Nebraska	North Dakota	South Dakota	Plains	U.S.
Farming	-1.1	-0.8	-0.3	-0.9	-0.8	-1.5	-1.8	-0.9	-1.0
Agricultural Services	1.1	1.4	5.4	5.3	4.3	2.4	1.2	3.2	5.2
Mining	-1.5	3.9	-3.3	-1.7	0.9	6.3	0.2	0.8	2.1
Construction	0.1	2.1	2.1	2.3	0.8	2.9	2.0	1.7	2.6
Durables—Mfg	-0.1	1.0	1.2	-0.3	.0	4.9	6.3	0.4	-0.1
Nondurables—Mfg	-0.2	1.6	0.7	-0.6	1.0	2.7	1.2	0.3	-0.2
TCU*	0.6	1.4	1.3	1.0	1.3	2.0	1.4	1.1	1.4
Wholesale Trade	2.7	3.7	2.4	1.2	3.3	3.4	3.1	2.3	2.4
Retail Trade	1.1	1.6	2.7	2.0	1.2	1.8	1.4	1.9	2.6
FIRE**	3.1	4.3	4.5	3.1	3.9	3.8	4.5	3.7	4.3
Services	3.1	3.7	4.4	4.0	3.3	3.9	3.1	3.8	4.1
Government	1.0	1.0	1.3	0.9	1.2	0.6	0.3	1.0	1.2
Total Employment	1.1	1.9	2.3	1.6	1.6	1.7	1.3	1.7	2.1

*Transportation, Communication, Utilities
**Finance, Insurance, and Real Estate

Nebraska's relative position among the Plains states deteriorates when the focus shifts from total personal income to nonfarm personal income. In the nonfarm portion of income, Nebraska and Iowa are at the bottom of the Plains group with 2.5 percent growth rates. The Plains and U.S. nonfarm personal income growth rates were 2.9 and 3.3 percent, respectively. Nebraska slipped from fourth position in total personal income growth to sixth in nonfarm personal income growth while maintaining the same growth rate of 2.5 percent in both categories. This is another indication that the state's farm sector has enjoyed stronger growth than those of the other states in the region.

The rate of nonfarm personal income growth was above that of total personal income growth in all the Plains states except Nebraska. Farm income behaved erratically in all states, occasionally showing year-to-year gains of over 100 percent. Precipitous declines also occurred during the 25 year span. A pattern of boom and bust has characterized farm income in the Plains states. The growth rate gap between total and nonfarm personal income in the other six states in the region, however, shows that their farm incomes did not keep pace over the period with the nonfarm portions of total personal income. The term *farm income* is a net concept. Farm personal income is derived from the net of gross receipts and gross costs.

A wide range of population growth rates has occurred across the Plains states over the past quarter century. Minnesota's population grew at an average annual rate of 0.8 percent. Missouri and Kansas followed at 0.6 percent and 0.5 percent, respectively. Nebraska was fourth with a 0.3 percent growth rate, while Iowa and North Dakota showed only minor population growth rates of 0.1 percent annually. The growth rates of the Plains states and of the region lagged the nation's growth rate of 1.1 percent by significant amounts.

Before labeling the Plains states as a laggard region with respect to the nation or Nebraska as a laggard state with respect to the Plains, the long-run performance of per capita personal income must be considered. Table 2 provides this information. Minnesota leads again with a 2.4 percent growth rate, followed by Missouri at 2.3 percent. Three states including Nebraska share the third position with a 2.2 percent growth rate. That rate equals the rate of the Plains region and that of the nation over the period. In per capita terms, Nebraska's personal income kept pace with the region, and the region's personal income kept pace with the nation.

There are two dimensions of this growth rate equivalence that may be cause for concern. First, Nebraska maintained its growth rate by offsetting below average growth in total income with below average growth in population. Second, Nebraska's per capita personal income is below that of the nation. Assuming that the equivalence of growth rates can be maintained, there will be a widening absolute gap between Nebraska and the nation in the levels of per capita income. Some appreciation of the prevailing gap can be gleaned from the 1988 levels of per capita income. In Nebraska, real per capita income for 1988 was $12,835 (fourth in the region) while the levels for the Plains region and the nation were $13,098 and $13,900, respectively.

Employment

Several sources of employment data are available at the state level, differing by

Table 4
State Rankings in the Plains Region+

Item	Iowa	Kansas	Minnesota	Missouri	Nebraska	North Dakota	South Dakota
Gross State Product (AAGR, 1963-1986)*	5	5	1	3	3	2	7
Gross State Product Per Capita (AAGR, 1963-1986)	4	7	1	6	3	2	4
Gross State Product Per Employee (AAGR, 1963-1986)	3	7	4	6	4	1	1
Total Personal Income (AAGR, 1963-1988)	7	2	1	2	4	5	6
Nonfarm Income (AAGR, 1963-1988)	6	4	1	2	6	2	5
Population (AAGR, 1963-1988)	5	3	1	2	4	5	7
Per Capita Income (AAGR, 1963-1988)	7	2	1	6	3	3	3
Per Capita Income (1988 level)	5	2	1	3	4	6	7
Total Employment (AAGR, 1969-1987)	7	2	1	4	4	3	6

*AAGR-Average Annual Growth Rate
+Ranking ties occur at tenth of a percent

the object and extent of coverage. The Nebraska Department of Labor routinely compiles the number of wage and salary jobs (not employed persons) in nonagricultural industries and the total number of employed Nebraskans (not jobs). A third basis of coverage is state employment data from BEA. The BEA employment data will be used here. The BEA statistic is a count of the total number of jobs in the state. Proprietors are included in the count, as well as all wage and salary jobs. These job counts are not the same as the number of employed persons. Persons can hold multiple wage and salary jobs or have a mixture of proprietorships and wage and salary jobs.

Nebraska employment on the BEA basis reached 913,657 in 1987, 9.2 percent of the Plains total of 9,951,885. Employment (and percent of region total) were: Iowa, 1.533 million (15.4 percent); Kansas, 1.406 million (14.1 percent); Minnesota, 2.487 million (25.0 percent); Missouri, 2.874 million (28.9 percent); North Dakota, 364 million (3.7 percent); and South Dakota, 374 million (3.8 percent).

Table 3 contains the average annual growth rates in employment by industry for the states of the Plains region, the region, and the nation over the 1969-1987 period. Nebraska's rate of 1.6 percent ranked fourth in the region, well below the national growth rate of 2.1 percent per year. Minnesota led in the total employment category with a 2.3 percent growth rate, the only Plains state to exceed the national rate. Iowa was at the bottom of the group with a growth rate of 1.1 percent.

Table 3 reveals that Nebraska did not lead any of the industries in employment growth rates. The highest finish for Nebraska was second in the government classification and a tie for second in farming. All the Plains states had long-term declines, rather than positive growth, in farm employment over the period. The Dakotas experienced severe rates of decline in the farm category. Nebraska's third place rankings came in agricultural services, mining, and wholesale trade. In services (an industry that experienced strong employment growth at the national level), Nebraska's growth rate of 3.3 percent was fifth in the region. The industry having the highest rate of employment growth in Nebraska over the period was agricultural services at 4.3 percent. Following in second place in Nebraska was the finance, insurance, and real estate sector with a growth rate of 3.9 percent. This rate earned Nebraska fourth place among the region states.

Early reports indicate that Nebraska enjoyed substantial employment growth during 1988. When the official figures are released from BEA in September, extension of the above analysis period to include 1988 could cause a gain in Nebraska's relative position among the states in several of the industries. The addition of one year's performance to the legacy of the past 20 years, however, may not have a great impact upon the historical trends and relative position of the state's economy.

Summary

A summary of Nebraska's relative position among the economies of the Plains states over roughly the past 20 to 25 years is given in Table 4. Taking all the indicators into account, Nebraska falls in the middle of the seven states. Only one of the indicators in Table 4 did not earn a third or fourth place ranking for Nebraska. The exception was a sixth place rank in nonfarm income. This sluggish performance of nonfarm income relative to neighboring states needs to be improved in coming years, especially if the farm sector can not sustain its recent record of income growth.

Minnesota has been the clear economic growth leader in the Plains region over the period analyzed, ranking first in all but one of the broad indicators in Table 4. This dominance is mostly due to the dynamic growth of the Twin Cities metropolis. Inconsistency across indicators marks the behavior of Iowa, Kansas, Missouri, and the Dakotas. The two areas of consistency have been Minnesota's top rankings and Nebraska's middle rankings.

Rebecca (Cox) Hofrock was an undergraduate research associate with the Bureau in the spring semester. She is a senior in accounting from Henderson, Nebraska.

Per Capita Income in Metropolitan Nebraska

Data for 1987 per capita personal income for metropolitan areas have been released by the Bureau of Economic Analysis. These data show that per capita personal income growth in 1987 for Nebraska's two metropolitan areas was below the national average. The data also show that per capita income for Nebraska's metropolitan areas continues to lag the average for the nation.

In 1987, the Omaha-Bellevue-Council Bluffs area had a per capita personal income of $15,033, 120th of the nation's 318 metropolitan areas. The Omaha area's per capita income was 97.1 percent of the U.S. metropolitan average. The Omaha area's growth in per capita income from 1986 to 1987 was 4.6 percent, well behind the U.S. growth rate of 6.0 percent.

Lincoln's growth rate at 5.9 percent nearly matched the nation's growth rate. Nevertheless, Lincoln's per capita income of $14,373 was only 92.8 percent of the U.S. level. Lincoln's per capita income ranks 147th in the nation.

Nebraska has only one county (Dakota) in the Sioux City, Iowa metropolitan area. Although the growth in per capita income from 1986 to 1987 for the Sioux City metropolitan area was an impressive 8.4 percent (due in part to a small decrease in measured population), the per capita income of $13,926 placed the area 169th in the national ranking, 89.9 percent of the U.S. average. Sioux City's income growth narrowly missed joining the ranks of the top ten fastest growing areas in the U.S.

Small, But Large

Douglas and Sarpy are two of the smallest counties in Nebraska in terms of land area, ranking 91st and 93rd, respectively. In 1987, however, they ranked first and second in the state when measured by population density. Douglas County had a population density of 1,247.7 persons per square mile, while Sarpy County boasted 406.7 persons per square mile.

New York County, New York averaged 67,960 persons per square mile.

Terms to Know

The Federal Reserve and Monetary Policy

Why should Nebraskans be concerned about a small nonelected group called the Federal Open Market Committee that meets regularly in Washington, D.C.? This committee determines the level of money available to the U.S. economy. The Open Market Committee is an arm of the Federal Reserve System (the Fed). The latter is the U.S. version of a central bank, sometimes referred to as the banker's bank. The role of the Federal Reserve is twofold: it regulates member banks (not savings and loans) and it sets monetary policy. Monetary policy controls the level of (spendable) liquid assets available to the nation's consumers. There are two closely related factors that form the basis of monetary policy. These factors are the nation's money supply and prevailing interest rates.

For the typical Nebraskan, the Fed determines the availability of loan funds directly and the interest paid on loans and assets held in the form of savings and CDs indirectly.

The monetary policies of the Fed control the direction of the economy—whether the economy expands or contracts. One problem in formulating monetary policy is the interlocking relationship between the money supply, economic growth, and inflation. Two extreme cases illustrate this problem. Consider a case where the economy is awash in money. Excessive money growth would overheat the economy, and rampant inflation soon would ensue. This inflationary period would be followed by a severe recession. Thus, a cheap money policy would bring a severe business cycle, perhaps even hyperinflation such as that experienced in Brazil.

At the other extreme, a stringent (tight) money policy can restrain an economy's potential. Recessions can be caused by an excessively severe monetary policy.

The on-going problem faced by the Fed is to formulate the correct monetary policy for the current situation. This is not easy, as information on the current and future position of the economy is imperfect. The Federal Reserve must determine the future course for the money supply at the same time it is trying to determine where the economy is headed. Furthermore, the impact of a change in monetary policy on the economy occurs over a long period. An analogy is a shower head some distance from the water heater. Slight adjustments with the faucet can cause wide swings in water temperature. Sometimes you get burned, sometimes you freeze.

There are two data series to watch in tracking the Fed's actions. The first is a series called M2. M2 is defined as the amount of cash in circulation plus checking and small savings accounts at banks and thrifts plus funds on hand in money market mutual funds. M2 represents the amount of liquid (spendable) assets available to the public. This series is published in weekly and monthly form on a seasonally adjusted basis. The weekly series is readily available in daily business publications. The variation in weekly M2, however, makes it difficult to detect trends. The monthly series is more stable, but is not as readily available as the weekly series. There is also a slight lag in its reporting.

The other indicator is the federal funds rate. Federal funds represent short-term borrowing among banks. The federal funds rate is the interest rate charged on those funds. The rate is available daily in the *Wall Street Journal*. Many analysts believe that changes in monetary policy will appear quickly in the federal funds rate.

Other interest rates in the economy are tied to changes in the federal funds rate, although the relation of long- and short-term interest rates is not a static one. (See this month's short on the inverted yield curve.)

John S. Austin

The Inverted Yield Curve

Short-term interest rates have been increasing steadily over the past year. Long-term rates have risen, but not as rapidly as yields on short-term financial instruments. Long-term rates have fallen in recent weeks. The product of this unusual situation is the inverted yield curve. Some analysts feel an inverted yield curve is a predecessor of recession, but the current situation differs in several respects.

The yield curve is the result of plotting interest rates for investment instruments by increasing maturity dates. The figure below shows two recent yield curves from a *Wall Street Journal* article on June 26, 1989. The two yield curves are for May 26, 1989 and June 26, 1989.

The behavior of the yield curves shown is not typical. Typically, long-term interest rates are higher than short-term rates, reflecting investor demands for a higher interest premium on long-term investments. But in the figure below, long-term interest rates are lower than short-term rates for both periods. The yield curves for the two periods are unusually flat. The June 26 yield curve lies below the May 26 curve, showing an overall decline in short- and long-term interest rates.

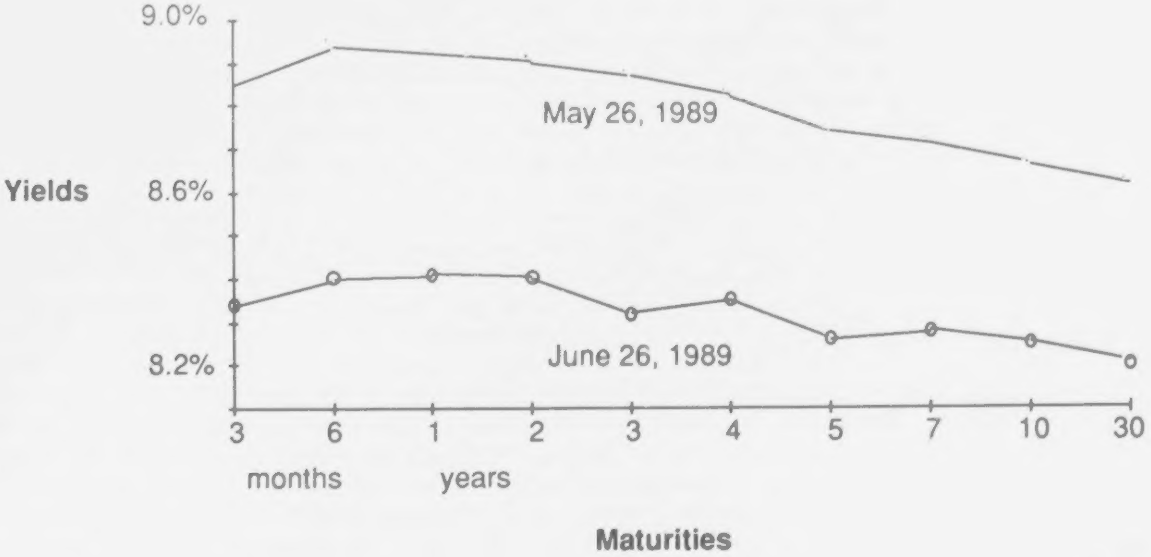
It commonly is posited that an inverted yield curve means investors believe inflation will decrease in the future. It also is theorized that a relationship exists between an inverted yield curve and recession. According to a recent article by the Kansas City Federal Reserve Bank, an inverted yield curve has preceded five of the last seven recessions. Exceptions occurred in 1953 and 1960. The inverted yield curve, however, falsely predicted a recession in the mid-1960s. On numerous occasions, the yield curve has been inverted long before the onset of recession. For example, the inverted yield curve occurred 16 months before the 1980 recession. The inverted yield curve may be a signal of bad times, but it is not a reliable gauge of when a downturn will occur.

There are two important factors that make the current situation different from previous inverted yield curves and recessions. First, long-term interest rates have remained fairly steady. In the past, both long- and short-term rates rose as the yield curve became inverted. Many analysts consider movements in long-term rates more important determinants of the future economy, as long-term rates are more likely to affect spending in home building and other major investment activities. The relative stability of long-term interest rates may indicate that the investment environment for long-term assets has not weakened because interest expense will not seriously erode profit. Thus, economic growth may continue even though the yield curve is inverted.

The second important factor about the current situation involves inventory stockpiles. Previous inversions of the yield curve were associated with inventory accumulation. As firms demanded more short-term debt to finance their extra inventory, short-term rates increased. Subsequently, in order to decrease inventories, businesses cut production, leading to an economic slowdown. Currently, however, inventory stockpiles are not excessive. The inventory-to-sales ratio remains in the 1.5 area.

Harold D. Peck, Jr.

*Harold D. Peck, Jr., was an undergraduate research associate in the Bureau of Business Research last semester. Harold has published previously in **Business in Nebraska**.*



Recommended Reading:

Foreign Ownership in the United States

There is a general perception in the United States that foreign investors are buying up the country. Some recent public opinion polls show that the general public believes that we are permitting foreign investors to dismantle our industries and, at the same time, to make off with our technology.

A recent article by the Morgan Guaranty Trust Company noted that by the end of this year, the recorded value of all foreign direct investment holdings in U.S. industry, commerce, and real estate could reach $380 billion, more than quadrupling during the last decade alone. But the article also noted that foreigners directly own only 4 percent of the U.S. business capital stock and control perhaps 13 percent. These percentages are small by international standards. Foreign-owned capital averages over 10 percent of GNP in most industrial countries. Incidentally, U.S. direct investments abroad had a book value of about $325 billion at the beginning of this year.

Is there any defensible reason to be concerned about foreign investments in the U.S? The following excerpt from the Morgan Guaranty Trust Company article appears to suggest that the answer to this question is no:

> *The United States stands to benefit handsomely by keeping the inflow of direct investment as free as possible, and not just for its contribution to current account deficit financing. For much of the postwar period, the United States was the free world's primary source of new technology, management skill, and international investment. As the economies of Europe and the Pacific Rim have matured, the United States inevitably has yielded some of its former pre-eminence and now has quite a bit to learn from the achievements of others...*
>
> *Direct investment inflows will only attain their full invigorating potential in a competitive U.S. economy that offers both a positive welcome and attractive production costs, especially labor costs...*

The article is on the Bureau's recommended reading list for those interested in foreign investments in the U.S. For more information, please write to:

World Financial Markets
Morgan Guaranty Trust Company
of New York
J.P. Morgan & Co., Incorporated
Economic Research
23 Wall Street
New York, NY 10015

F. Charles Lamphear

Several counties in Alaska and Texas have less than one inhabitant per ten square miles. Arthur, McPherson, and Sioux Counties in Nebraska each average less than one person per square mile.

On The Rise Again . . .

Nebraska Farmland Values Continue to Increase

According to a recent report by the Federal Reserve Bank of Kansas City, nonirrigated farmland in Nebraska increased in value 5 percent during the first quarter of this year. The value of irrigated land increased 4 percent, and ranchland increased 3 percent for the first quarter..

For the fifth consecutive quarter, the largest gain in farmland values in the 10th Federal Reserve District occurred in Nebraska. This district consists of Colorado, Kansas, Nebraska, Oklahoma, Wyoming, and parts of New Mexico and Missouri. Farmland values in the district have increased, on average, 20.7 percent from their low point at the end of 1986.

John S. Austin

Population Shifts Toward Metropolitan Counties

Nebraska's metropolitan counties continue to grow, even though total population in the state has declined in recent years. Since 1980, the metropolitan population has increased more than 44,000 (6.3 percent). Meanwhile the decline in nonmetropolitan population of over 20,000 has offset almost half the metropolitan increase. As a result, Nebraska is rapidly moving toward a point when half the state's population will be in metropolitan areas.

		Population	
Year	State	Metropolitan	Nonmetro
1980	1,569,825	708,018	861,807
1983	1,597,000	730,000	867,000
1985	1,605,000	745,500	859,500
1986	1,598,000	748,000	850,000
1987	1,594,000	752,800	841,200
		Percentage of Total	
1980	100.0	45.1	54.9
1983	100.0	45.7	54.3
1985	100.0	46.4	53.6
1986	100.0	46.8	53.2
1987	100.0	47.2	52.8
		Percentage Change	
1980-1983		3.1	0.6
1980-1985		5.3	-0.3
1980-1986		5.6	-1.3
1980-1987		6.3	-2.4

(Metropolitan counties are: Dakota, Douglas, Lancaster, Sarpy, and Washington.)

Merlin W. Erickson

Review and Outlook

National Outlook

A major concern this year is a return to inflation. What the Federal Reserve can and should do about this fear remains problematical. The current level of inflation has been blamed on increasing energy and food prices. This inflationary pressure is not limited to energy and food prices, however. We are beginning to see general increases across a range of items. The medical care component of the Consumer Price Index (CPI) was 7.3 percent higher this May than a year ago. The "Other Goods and Services" component of the CPI (a catchall category covering tobacco, personal care, and education items) was 7.6 percent higher than a year ago.

Early signs of price increases can lead to an inflation psychology in our price system. If a producer perceives that other producers are raising prices, he or she may raise prices before any actual cost increases.

While the economy appears to be inflating, it also is showing some signs of weakness. Industrial production has shown no growth for the first five months of this year. Retail sales, deflated by the CPI, have expanded little this year.

Another sign of weakness in the economy is the GNP figures for the first quarter. The latest GNP figures for the first quarter of 1989 show a 4.4 percent increase from the previous quarter. The increase is only a modest 1.9 percent, however, after adjusting the GNP figures for the 1988 drought.

The Fed faces a dilemma. Should the Fed tighten the money supply to prevent further inflation, or should the Fed ease credit to stimulate the economy? Lower interest rates likely would lead to increased construction activity. Tighter controls on the money supply may trigger another major downturn, such as the one experienced in 1981-1982.

The Fed can choose to do nothing, thereby maintaining an even keel policy. Given the current abundance of mixed signals, an even keel policy is appealing. Bankers and businessmen know that radical changes in monetary policy are harmful. If a steady course is maintained (that is, if the Federal Reserve sets a policy of gradual or no change), then bankers and businessmen can adjust to new policy directions. It is radical change in policy that

Table I
National Indicators

	Annual		Quarterly (SAAR)			
	1987	1988	1988:II	1988:III	1988:IV	1989:I
Real GNP (percent change)	3.4	3.9	3.0	2.5	2.4	4.4
Real Consumption (percent change)	2.7	2.8	3.0	3.9	3.5	1.3
Housing Starts ($ millions)	1.6	1.5	1.5	1.5	1.6	1.5
Auto Sales ($ millions)	10.3	10.6	10.6	10.6	10.5	9.7
Interest Rate (90 day T-bill)	5.8	6.7	6.2	7.0	7.7	8.5
Unemployment Rate (percentage)	6.2	5.5	5.5	5.5	5.3	5.2
Industrial Production Index (1977=100)	129.8	137.2	136.0	138.4	139.9	140.6
Money Supply, M2 (percent change)	6.6	5.1	7.1	3.8	3.6	1.9

NOTE: SAAR — Seasonally Adjusted at Annual Rates

Table II
Employment in Nebraska

	Revised April 1989	Preliminary May 1989	May % Change vs. Year Ago
Place of Work			
Nonfarm	710,598	715,415	3.2
Manufacturing	97,473	97,762	4.4
Durables	47,512	47,639	2.4
Nondurables	49,961	50,123	6.2
Mining	1,637	1,635	-4.2
Construction	25,926	27,297	7.9
TCU*	47,221	47,432	6.1
Trade	183,174	183,976	3.4
Wholesale	52,613	52,880	5.8
Retail	130,561	131,096	2.5
FIRE**	48,783	49,021	2.4
Services	165,058	165,966	4.6
Government	141,326	142,326	-0.9
Place of Residence			
Civilian Labor Force	816,948	813,227	0.02
Unemployment Rate	2.8%	2.5%	

*Transportation, Communication, and Utilities
**Finance, Insurance, and Real Estate

Source: Nebraska Department of Labor

Table III
Price Indices

	May 1989	% Change vs. Year Ago	YTD % Change vs. Year Ago
Consumer Price Index - U* (1982-84 = 100)			
All Items	123.8	5.4	5.0
Commodities	117.5	5.8	5.0
Services	130.8	5.0	4.9
Producer Price Index (1982 = 100)			
Finished Goods	114.2	6.2	5.5
Intermediate Materials	112.7	6.1	6.4
Crude Materials	106.3	9.5	8.5
Ag Prices Received (1977 = 100)			
Nebraska	161	11.0	14.4
Crops	140	37.3	42.7
Livestock	174	1.2	3.7
United States	151	12.7	13.6
Crops	145	23.9	24.4
Livestock	158	4.6	6.2

U* = All urban consumers
Source: U.S. Bureau of Labor Statistics

leads to complications. Since early 1988, the Greenspan Fed has shown a willingness to make gradual adjustments.

Mortgage rates have been falling since early spring. In March, the 30 year fixed rate mortgage rate was 11.3 percent. In the first three weeks of June, that rate fell to 10.2 percent. Despite that good news, housing starts in May were off 4.6 percent. Builders have become cautious with all the talk of a coming recession. The last thing builders want is a large inventory of unsold units that will consume their cash flow.

The inventory-to-sales ratio in April dropped to 1.49, indicating that businesses are keeping a month and a half of sales in inventory. Retail sales in May edged up a modest 0.1 percent before adjusting for inflation. Whatever measure of inflation is applied, the May figure will show a decrease in retail sales. The May increase followed a robust April increase of 1.0 percent.

The CPI advanced 0.6 percent in May. After removing food and energy prices, the gain was a more modest 0.5 percent. Energy prices increased 1.6 percent due to rising retail gasoline prices. Food prices rose 0.6 percent, led by fruit and vegetable inflation of 3.2 percent. The May CPI was 5.4 percent ahead of last year's figure.

Producer prices jumped 0.9 percent in May. Eliminating the food and energy components, the index increased 0.5 percent. Energy prices swelled 3.3 percent, led by a wholesale gasoline price increase of nearly 29 percent from a year ago. Food prices in May grew 0.8 percent, with fresh and dry vegetable price gains of 26.4 percent. Tomato and celery prices doubled. The inflation in May continues to reflect advances in food and energy prices.

Nebraska Outlook

U.S. winter wheat production was down 9.8 percent from 1988, according to the latest revised figures. Yields for winter wheat were the lowest in 11 years. Nebraska winter wheat production decreases exceeded those of the U.S a whole. Nebraska winter wheat production was off 26.0 percent compared to last year, the smallest crop since 1944.

Building activity in Nebraska is running counter to national trends. Single family homes in Nebraska increased 17 percent through May on a year to date

Table IV
City Business Indicators
March 1989 Percent Change from Year Ago

The State and Its Trading Centers	Employment (1)	Building Activity (2)
NEBRASKA	1.7	18.3
Alliance	2.3	158.1
Beatrice	1.6	32.3
Bellevue	1.0	-17.2
Blair	1.0	2,285.7
Broken Bow	1.9	-33.0
Chadron	1.9	-42.3
Columbus	2.9	197.7
Fairbury	2.4	-79.2
Falls City	1.2	137.4
Fremont	1.4	45.7
Grand Island	1.5	9.9
Hastings	1.9	4.5
Holdrege	1.8	-39.7
Kearney	2.1	-33.5
Lexington	3.8	84.3
Lincoln	1.8	2.3
McCook	1.6	-86.0
Nebraska City	1.7	-25.1
Norfolk	1.6	-27.3
North Platte	1.8	-1.4
Ogallala	1.4	-12.5
Omaha	1.0	16.8
Scottsbluff/Gering	0.9	71.0
Seward	2.9	-41.6
Sidney	3.3	125.4
South Sioux City	0.0	613.7
York	1.4	-23.0

(1)As a proxy for city employment, total employment (labor force basis) for the county in which a city is located is used

(2)Building activity is the value of building permits issued as a spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Cost Index is used to adjust construction activity for price changes

Sources: Nebraska Department of Labor and reports from private and public agencies

Figure I
City Business Index
February 1989 Percent Change from Year Ago

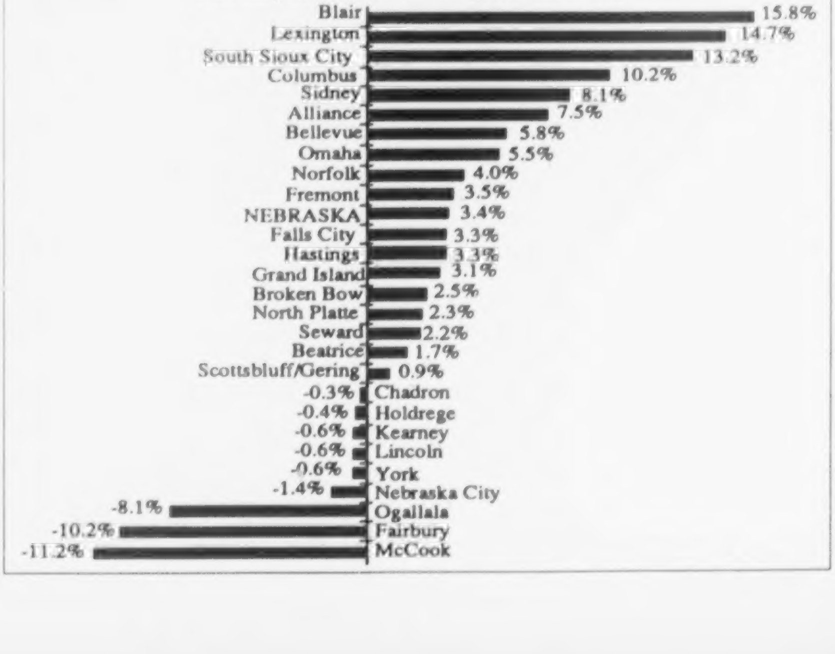
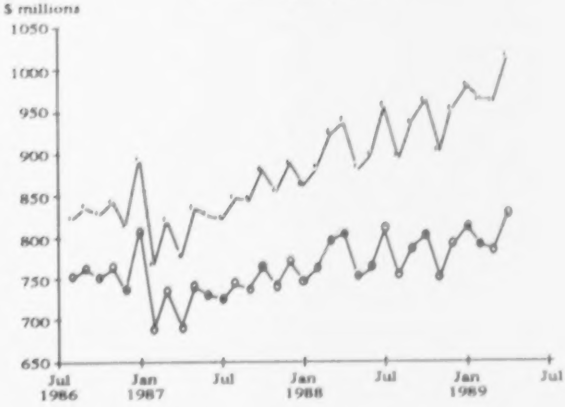


Table V
Net Taxable Retail Sales of Nebraska Regions and Cities

	City Sales (2)		Region Sales (2)		
Region Number and City (1)	Mar. 1989 (000s)	% Change vs. Year Ago	Mar. 1989 (000s)	% Change vs. Year Ago	YTD % Change vs. Year Ago
NEBRASKA	$876,805	9.3	$1,009,516	8.2	7.1
1 Omaha	302,854	15.2	376,444	12.6	9.4
Bellevue	13,243	19.7	*	*	*
Blair	4,564	5.1	*	*	*
2 Lincoln	112,197	1.4	131,190	1.9	3.1
3 South Sioux City	4,479	13.7	6,574	7.5	-5.8
4 Nebraska City	3,629	3.3	17,451	-4.0	2.1
6 Fremont	15,576	7.5	29,362	2.0	1.8
West Point	2,826	-1.1	*	*	*
7 Falls City	2,182	1.5	9,838	2.6	0.6
8 Seward	4,594	13.2	15,443	1.1	2.0
York	6,550	5.1	16,021	5.3	9.4
10 Columbus	15,115	13.6	28,662	7.9	7.9
11 Norfolk	18,796	16.4	34,072	8.4	8.9
Wayne	2,805	2.0	*	*	*
12 Grand Island	33,264	9.5	47,937	8.3	9.4
13 Hastings	15,376	10.1	25,520	3.3	9.4
14 Beatrice	7,888	4.0	18,490	6.1	3.4
Fairbury	2,471	-3.8	*	*	*
15 Kearney	18,186	5.9	26,758	7.5	12.0
16 Lexington	7,125	28.7	18,200	15.9	13.2
17 Holdrege	4,399	7.8	8,754	8.1	7.8
18 North Platte	14,507	8.6	18,610	8.1	5.6
19 Ogallala	4,054	-14.1	9,696	-2.5	11.2
20 McCook	7,787	-0.9	11,577	3.5	8.2
21 Sidney	3,507	11.4	7,688	24.7	10.5
Kimball	1,656	5.2	*	*	*
22 Scottsbluff/Gering	16,331	0.1	25,342	14.6	11.5
23 Alliance	5,288	9.4	13,910	9.9	7.1
Chadron	2,683	8.4	*	*	*
24 O'Neill	4,043	12.5	13,436	12.7	15.3
Valentine	2,134	7.0	*	*	*
25 Hartington	1,393	-0.6	8,557	-7.6	-0.2
26 Broken Bow	3,562	13.4	12,225	2.9	7.5

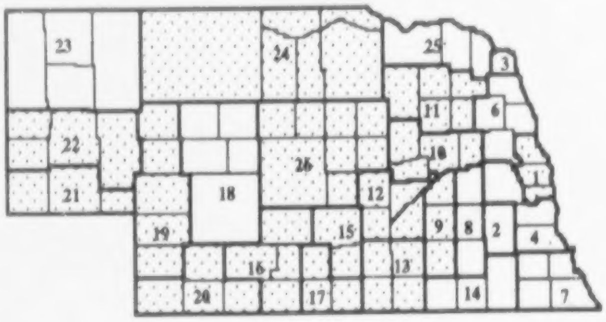
(1) See region map
(2) Sales on which sales taxes are collected by retailers located in the state. Region totals include motor vehicle sales
* Within an already designated region
Compiled from data provided by the Nebraska Department of Revenue

Figure II
Nebraska Net Taxable Retail Sales
(Seasonally Adjusted)



(1) The Consumer Price Index (1982-84 = 100) is used to deflate current dollars into constant dollars

Figure III
Region Sales Pattern
YTD as Percent Change from Year Ago



Shaded areas are those with sales gains above the state average. See Table V for corresponding regions and cities

basis. The good news on the mortgage rate has evidently resulted in advances in Nebraska construction. The dollar value of total construction in Nebraska is up 6 percent through May, versus the same period a year ago.

Nebraska retail sales (Table V) continue to display strength through the first three months of the year. On a year-to-date basis through March, Nebraska net taxable retail sales were 7.1 percent ahead of a year ago. (Region sales in Table V contain motor vehicle sales, whereas city sales do not). The lackluster performance of national auto sales in recent months is reflected in the March Nebraska motor vehicle sales. That figure is down 3.6 percent from a year ago. With an expected decrease in Nebraska's net farm income this year, the overall strength in the retail sales numbers so far this year should wane.

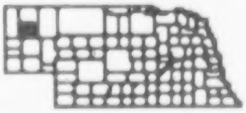
The city business index (Figure I) shows the boom-to-bust nature of construction activity. For example, in Fairbury a single large building project (a school) inflated the activity numbers for the previous nine months. Unless another similar size project is permitted in Fairbury, they are likely to remain on the negative side of the list for the next eight months. Bureau staff members are looking at alternative ways to present city data in order to avoid the boom-to-bust nature of construction activity.

Unemployment in Nebraska remains at low levels. While the U.S. unemployment rate in May was 5.2 percent, the Nebraska unemployment rate was less than half that, 2.5 percent. Once again, Lincoln's unemployment rate was 2.3 percent, while Omaha was above the state rate at 3.0 percent.

John S. Austin

County of the Month

Box Butte



Size of county: 1,067 square miles, ranks 14th in the state
Population: 14,300 (estimated) in 1987, a change of +4.4 percent from 1980
Median age: 27.8 years in Box Butte County, 29.7 years in Nebraska in 1980
Per capita personal income: $14,509 in 1987, ranks 26th in the state
Net taxable retail sales ($000): $76,680 in 1988, a change of +14.6 percent from 1987; $18,450 during January-March 1989, a change of +10.9 percent from the same period one year ago
Number of business and service establishments: 375 in 1986; 62.7 percent had less than five employees
Unemployment rate: 3.9 percent in Box Butte County, 3.6 percent in Nebraska for 1987
Nonfarm employment (1988):

	State	**Box Butte County**
Wage & salary workers	688,146	5,337
	(percent of total)	
Manufacturing	13.8%	8.6%
Construction and Mining	3.8	1.5
TCU	6.5	36.2*
Retail Trade	18.5	13.5
Wholesale Trade	7.3	4.5
FIRE	7.0	4.0
Services	23.0	13.9
Government	20.1	17.8
Total	100.0%	100.0%

*Large percentage due to concentration of transportation industry

Agriculture:

Number of farms: 556 in 1987, 543 in 1982
Average farm size: 1,149 acres in 1987
Market value of farm products sold: $90.1 million in 1987 ($162,000 average per farm)

Sources: U.S. Bureau of the Census, U.S. Bureau of Economic Analysis, Nebraska Department of Labor, Nebraska Department of Revenue

Merlin W. Erickson

Business in Nebraska

PREPARED BY BUREAU OF BUSINESS RESEARCH
Association for University Business & Economic Research

Nonprofit Org.
U. S. Postage
PAID
Lincoln, Nebraska
Permit No. 46

Business in Nebraska is issued as a public service and mailed free of charge upon request to 200 CBA, University of Nebraska-Lincoln, Lincoln, NE 68588-0406. Copyright 1989 by Bureau of Business Research, University of Nebraska-Lincoln.

July 1989, Volume 44 No. 538

University of Nebraska-Lincoln-- Martin Massengale, *Chancellor*
College of Business Administration--Gary Schwendiman, *Dean*

Bureau of Business Research
F. Charles Lamphear, *Director*
Merlin W. Erickson, *Research Associate*
Margo Young, *Editorial Assistant*
John S. Austin, *Statistical Coordinator*
David D. DeFruiter, *Statistical Technician*
Jodi Benson, *Staff Secretary*
Barbara Sunsion, *Composing Technician*
Lisa Darlington, *Staff Secretary*

The University of Nebraska-Lincoln does not discriminate in its academic, admission, or employment programs and abides by all federal regulations pertaining to same.

U7860-1

Business In Nebraska

August 1989
Vol. 44 No. 539

Prepared by the Bureau of Business Research
200 College of Business Administration
University of Nebraska-Lincoln
Lincoln, NE 68588-0406
402/472-2334

Early Developments in Nebraska Irrigation

F. Charles Lamphear
Director
Bureau of Business Research

Merlin W. Erickson
Research Associate
Bureau of Business Research

Early settlers to Nebraska and surrounding areas generally found rainfall to be erratic and, at best, marginally adequate for agriculture, contrary to posters and published ads portraying a plains oasis. Land speculators promised settlers that "rain would follow the plow." In other words, rain would follow the migrants. Rain did not follow the migrants, however, and some left on the brink of starvation. Many that remained turned to irrigation as a way to develop a stable and prosperous agricultural economy.

Irrigation was not always popular with farmers and businessmen. Many viewed the presence of irrigation as a setback for agriculture, because use of supplemental water implied unsuitable agricultural conditions.

This article is the second in a series on the economic importance of irrigation in Nebraska. The first article, which appeared in the December issue of *Business In Nebraska*, examined the importance of irrigation to the state's economy for 1985. Free copies are available from the Bureau of Business Research (BBR) while supply lasts.

The current article studies irrigation development in Nebraska before 1940. Later articles will report irrigation development since 1940 and current BBR research on the economic importance of irrigation under different simulated drought conditions.

Irrigation came to Nebraska from California, where it had developed in the 1840s. Like the national movement, irrigation began in the western part of the state along the Platte River and gradually moved eastward and adjacent to the larger water courses.

Rudimentary irrigation projects developed along the Platte River near Fort Laramie in Wyoming as early as 1847. Water from these projects was used mainly to grow vegetables for sale to Oregon-bound immigrants.

The first actual irrigation ditch in Nebraska was constructed on the South Platte River in 1859, nine years before the state joined the union on March 1, 1867.

The earliest irrigation projects along the Platte in Wyoming and Nebraska were the work of individual farmers. The first cooperative effort in Nebraska did not occur until 1870 when a stock company was formed to divert water from the South Platte to irrigate 3,000 acres. The operation was abandoned after three years because of increased rainfall, seemingly fulfilling the land speculators' promise that rain would follow the settlers. The

State Economic Scoreboard

Change from same month one year ago
See Review and Outlook on page 8 for more details

	State	Metro+	Nonmetro
Motor Vehicle Sales (April) Constant $	↓ -4.0%	↓ -0.3%	↓ -7.1%
Nonmotor Vehicle Sales (April) Constant $	↑ 10.1%	↑ 9.1%	↑ 11.2%
Building Activity (April) Constant $	↓ -6.8%	↓ -10.6%	↓ -0.9%
Employment (June)	↓ -0.1%	↑ 0.2%	↓ -0.4%
Unemployment Rate* (June)	↓ 3.6%	↓ 3.7%	↓ 3.5%

+Omaha and Lincoln. *Unemployment is this month's rate, not a percent change from year ago.

period of abundant rainfall, however, was short-lived.

William E. Smythe, a key figure in the irrigation movement in the American west, wrote in 1891 that "The greatest single problem that concerns the development of Nebraska is the problem of irrigation." He further noted that "It is here that the test [of irrigation] must be made in order to prevent the retrogradation of the country back to wild prairie or mere grazing grounds—in order to prevent the cowboy from driving out the farmer and the homesteader." Smythe later reflected on his life and his involvement in the irrigation movement in his book entitled *The Conquering of Arid America* when he said "I had taken the cross of a new crusade. It was not merely a matter of ditches and acres, but a philosophy, a religion, and a program of practical statesmanship rolled into one."

Four factors largely contributed to the early development of irrigation: 1. abundant water; 2. the irrigation district statutes adopted beginning in 1895; 3. the Reclamation Act of 1902; and 4. the drought of the 1930s.

Irrigation as we know it today in Nebraska could not have been possible without an abundant water supply. The Platte River and its tributaries were major sources of water for the earliest irrigation projects. Nearly 90 percent, or over 130,000 acres, of the irrigated land in the state in 1900 was found within the drainage basin of the Platte River. In addition, about 9,000 acres in 1900 were irrigated from ditches supplied by the Republican River and its tributaries. Furthermore, some irrigation development had taken place in the extreme northwestern part of the state along the White River and its branches. Most of the ditches were small and privately owned. By 1900, water diverted from the Niobrara River was used to irrigate 7,317 acres.

The development of groundwater for irrigation was a later phenomenon. At the turn of the century, no comprehensive investigation had been undertaken of the state's geological structure to determine the prospects for groundwater development. A limited study on groundwater availability was made in the late 1890s for a 7,400 square mile area that included the counties of Scotts Bluff, Banner, Cheyenne, Box Butte, Dawes, Kimball, and Sioux. Study results showed a substantial variation in groundwater supplies and depths. The report noted that where the well system was employed, water was pumped by windmills into reservoirs and then diverted to the cultivated acres. In 1899, 843 acres were irrigated in this manner; nearly half of these acres were located in the study area.

In 1895, Nebraska enacted an irrigation code. The code created a comprehensive administrative system for acquiring and administering water rights. Professor David Aiken of the Department of Agricultural Economics at UN-L recently wrote that the "... [1895] code was absolutely necessary to developing large scale irrigation projects in Nebraska." The irrigation district statutes, a number of which were passed in 1895, provided the legal and financial tools necessary for irrigators to develop large scale irrigation projects. Those statutes gave irrigation districts the power to make assessments for water charges.

A group of 17 U.S. congressmen and senators from western states met in 1901 to formulate legislation to establish a revolving reclamation fund from the proceeds of western land sales for the construction of irrigation projects. Their initial efforts led to the passage of the Federal

Table 1
Irrigation Summary for Nebraska 1890-1940

				Census Year			
Item	1890	1900	1910	1920	1930	1935	1940
ALL LAND							
State Land Area (acres)	49,157,120	49,157,120	49,157,120	49,157,120	49,157,120	49,157,120	49,057,920
Land in Farms (acres)	21,593,444	29,911,779	38,622,021	42,225,475	44,708,565	46,615,762	47,343,981
Number of Farms	113,608	121,525	129,678	124,417	129,458	133,616	121,062
IRRIGATED LAND							
Number of Farms	214[1]	1,932[1]	1,852	3,021	4,602	5,140[2]	6,913
Area Irrigated							
Farm Reports (acres)	11,744	148,538	NA	199,815[3]	404,481[3]	345,417[4]	473,775[5]
Enterprise Reports (acres)	NA	NA	255,950	442,690	532,617	NA	610,379

[1] Reported as number of irrigators
[2] Farms reporting irrigated land from which crops were harvested
[3] Acreage of irrigated crops including some duplication where two or more crops were harvested from the same land
[4] Irrigated land from which crops were harvested
[5] Irrigated land from which crops were harvested plus 10,869 acres of irrigated land used only for pasture

Source: U.S. Bureau of the Census, *Sixteenth Census of the United States, 1940, Irrigation of Agricultural Lands: Nebraska* (Washington: GPO, 1941)

Table 2
Number of Irrigators and Acres Irrigated by County
1889 and 1899

Counties	Number of Irrigators 1900	Number of Irrigators 1890	Acres Irrigated 1900	Acres Irrigated 1890
State Total	1,932	214	148,538	11,744
Buffalo	20	*	1,393	*
Cheyenne	162	36	21,288	3,154
Dawes	105	12	4,027	267
Dawson	353	*	20,097	*
Deuel	101	4	11,794	125
Dundy	63	4	4,552	41
Holt	21	*	2,218	*
Keith	73	6	12,646	295
Kimball	21	11	4,225	441
Lincoln	200	37	22,508	3,049
Platte	46	*	1,488	*
Red Willow	31	3	1,542	72
Scotts Bluff	291	70	29,244	2,753
Sioux	50	23	1,433	1,316
All other counties	415	8	10,083	231

*No irrigation reported in 1889. Source: U.S. Bureau of the Census, *Twelfth Census of the United States 1900, Agriculture, 6, Part 2* (Washington: GPO, 1902)

Reclamation Act in 1902. The Federal Reclamation Act enabled irrigation districts to obtain financial aid from the new Reclamation Service, later named the Bureau of Reclamation, which was made part of the Department of the Interior. The North Platte project was the first to be built in Nebraska under the act. Work started in 1905 on the North Platte project and essentially was completed with the construction of Guernsey Dam in 1927. The North Platte project supplied water to 165,000 acres in Nebraska.

The 1930s encompassed the driest decade in recorded history. In general, interest in irrigation grew in proportion to the intensity of the drought. The statewide corn yield averaged only 3.2 bushels per acre in 1934 and 2.5 bushels in 1936, compared with an average of 24 bushels per acre for the ten year period 1923 to 1932. Wheat, the second most important crop, yielded only 7.8 bushels per acre, compared with an average of 15.4 bushels for the prior decade. Many lost their farms because of their inability to make mortgage payments. The federal government provided various forms of assistance. One area of assistance involved Public Works Administration (PWA) funds. Congress made PWA funds available to public power and irrigation districts in 1935. Loans to the Tri-County, Sutherland, North Loup, and Middle Loup public power and irrigation districts were made from this federal government fund.

The Eleventh Decennial Census of the U.S. of 1890 was the first official U. S. irrigation census. A special census of irrigation was taken in 1902, followed by the regular decennial censuses of 1910, 1920, 1930, and 1940. In addition, a mid-decennial agricultural census that included irrigation was conducted in 1935.

Two sets of census statistics were compiled from these surveys. One set was based on farm and ranch response information. The second set was based on enterprise response information. Both sets are reported in Table 1, because the reported irrigation acreages differ substantially between the two sets.

A major reason for the reporting discrepancy between the two data sets is due to the way enterprises, especially large enterprises, reported irrigated acres. An irrigation enterprise was defined as an independent irrigation establishment that owned or operated works for supplying water to agricultural land. A farm was defined for enumerative purposes as an independent working unit or tract of land not less than three acres unless its agricultural products in the year preceding the enumeration were valued at $250 or more.

Farmers usually obtained rights from irrigation enterprises to water their entire farms. The enterprise, especially the larger enterprises, were not likely to know the exact acres irrigated, because their records showed water rights. In fact, some enterprise records showed only the quantity of water delivered to users. Moreover, many farms received water from more than one enterprise, no doubt resulting in multiple counting of irrigated acres.

The decennial and mid-decennial figures contained in Table 1 represent preceding year conditions. For example, the 1900 data reflect 1899 conditions. Nebraska's acreage in 1900 (1899) was reported at about 148,000 from farm reports, but it was likely greater. (See Table 1.) Severe drought conditions existed in 1899, and many ditches were abandoned or opened only in the early season. In many areas, crops that were watered only once were not reported as irrigated. According to the census, "It is exceedingly probable that a very large area of land partially irrigated is not included in the Census Report." In spite of statistical aberrations, the number of Nebraska irrigators increased over 800 percent during the 1890s, and irrigated acres swelled over 1,100 percent. (See Table 1.) The annual percent increase in irrigated acres for the 1890-1940 period averaged about 7.7 percent. The annual percent increase in the number of irrigated farms averaged about 7.2 percent, nearly equaling the rate of growth in irrigated acres. The actual

Table 3
Irrigated Acres for Counties With at Least 2,000 Acres Irrigated in 1940 by Census Year

		Years	
Counties	1940	1930	1920
Box Butte	3,435 (22)*	2,400 (16)	2,162 (16)
Buffalo	24,076 (6)	12,236 (8)	3,019 (14)
Chase	2,520 (24)	2,060 (17)	2,292 (15)
Cheyenne	4,178 (20)	-	-
Custer	3,797 (21)	-	-
Dawes	14,301 (8)	9,911 (10)	9,005 (12)
Dawson	70,308 (3)	69,702 (3)	33,700 (4)
Deuel	8,585 (13)	6,857 (12)	10,317 (8)
Dundy	4,487 (18)	3,470 (14)	9,045 (11)
Garden	11,804 (9)	24,077 (6)	20,488 (7)
Garfield	2,187 (25)	-	-
Hall	10,875 (11)	6,425 (13)	-
Hitchcock	11,366 (10)	10,974 (9)	9,786 (9)
Kearney	6,730 (15)	-	-
Keith	16,690 (7)	23,141 (7)	25,832 (6)
Kimball	8,192 (14)	7,422 (11)	9,101 (10)
Lincoln	44,022 (4)	35,708 (4)	35,246 (3)
Loup	4,224 (19)	-	-
Merrick	2,878 (23)	-	-
Morrill	79,962 (2)	87,306 (2)	55,216 (2)
Phelps	4,502 (17)	-	-
Red Willow	4,542 (16)	3,256 (15)	4,013 (13)
Scotts Bluff	200,468 (1)	193,816 (1)	173,245 (1)
Sioux	32,824 (5)	25,578 (5)	29,796 (5)
Valley	9,288 (12)	-	-

*Numbers in parentheses indicate rank. Source: U.S. Bureau of the Census, *Sixteenth Census of the United States, 1940* (Washington: GPO, 1941).

number of irrigated acres declined between 1930 and 1935. This decline likely was due to the severe drought conditions of the 1930s. (See Table 1.)

The acreage figures presented in Table 2 show that irrigation in the 1890s was confined almost entirely to the western half of the state. For example, more than 75 percent of the total acreage reported as irrigated in 1900 was in the North Platte River valley.

Table 3 presents census information on irrigated acres by county for later periods. Only those counties with 2,000 or more irrigated acres in 1940 are listed individually. Numbers in parentheses indicate rank. Tables 2 and 3 show that Scotts Bluff County dominated all counties in the early period of irrigation development.

Irrigation was practiced on 1.4 percent of the farms of the state in 1910. (See Table 1.) In 1900, the proportion of irrigated farms was higher (1.6 percent), while in 1890 it was about 0.2 percent of all farms. The only county in which more than one-half the farms were irrigated in 1910 was Scotts Bluff, where the percentage was 62.2. In five other counties, the proportion was between 10 percent and 20 percent. In five additional counties, it was 5 percent to 10 percent.

From 1900 to 1910, the number of farms on which irrigation water was applied decreased 4.1 percent for the state as a whole. (See Table 1.) Only three of the counties for which comparative figures are available showed increases in the number of such farms, but in two of these the increases were large—368 percent in Sioux County and 141.2 percent in Scotts Bluff County. Both of these counties were affected in large part by the North Platte project of the United States Reclamation Service. Decreases in irrigated farms outside the three counties mentioned were largely due to a succession of wet seasons and a return to dryland farming.

The fact that there was an increase between 1900 and 1910 in the irrigated acreage but a decrease in the number of farms irrigated is explained by the abandonment of irrigation in parts of the state where it was practiced on a small scale and its extension in the western counties where the rainfall was less and where much larger parts of the remaining farms were irrigated.

Of the irrigated lands in 1900, 129,726 acres produced grain and roughage crops, and 18,812 acres were used only for pasture. Of the total crop area irrigated in 1900, 55.9 percent was in hay and forage. In 1910, the category garnering the largest irrigated acreage was wild, salt, or prairie grasses, representing 27.3 percent of the total irrigated acreage of the crops given in Table 4. Alfalfa was next, with 23.5 percent of this total; then corn, with 15.9 percent; followed by oats, with 13.9 percent. No other individual crop covered as much as 7 percent of the total acres irrigated. In 1890, 36.9 percent of the irrigated cropland acres produced wild, salt, or prairie grasses. In 1900, which is not shown in Table 4, almost a fifth of all irrigated land was pasture. Of the cropland irrigated, over 55 percent was devoted to hay and forage crops.

Table 4
Acreage of Crops Produced on Irrigated Land in Nebraska for 1889 and 1909

Crop	Acres	
	1889	1909
Cereals		
Corn	33,078	21,552
Oats	5,090	18,794
Wheat	14,143	9,015
Barley	940	3,495
Rye	741	427
Other	10	2,493
Seeds		
Alfalfa	*	1,192
Other	*	*
Hay and Forage:		
Alfalfa	22,172	31,842
Wild, Salt, or Prairie Grasses	47,890	37,019
Other	2,430	635
Other Crops		
Potatoes	1,075	6,077
Sugar Beets	*	3,114
Other	2,157	*

* No irrigation reported. Sources: U.S. Bureau of the Census, *Twelfth Census of the United States, 1900, Agriculture, 6, Part 2* (Washington: GPO, 1902) and U.S. Bureau of the Census, *Census of the United States, 1910, Agriculture, 6, Part 2* (Washington: GPO, 1912)

Table 5
Source of Water Supply
Irrigated Area: Acres

Source	1920	1930	1940
Streams	437,647	503,723	517,037
Wells	546	23,452	81,034
Lakes	-	336	251
Other*	4,497	5,106	12,057

* Includes springs, city water, stored storm water, sewage, waste water, seepage, and drainage. Source: U.S. Bureau of the Census, *Sixteenth Census of the United States, 1940, Irrigation of Agricultural Lands: Nebraska* (Washington: GPO, 1941)

Table 5 presents summary data on water sources for 1920, 1930, and 1940. The summary data show that groundwater was not a major source of water for irrigation in the earlier years. In 1940, wells provided water for about 13 percent of the total irrigated acres, nearly equaling the percentage offset in the decline in stream-fed irrigation.

The early history of irrigation in Nebraska includes public power development. Nebraska was the first and only all public power state in the U.S. All power that is generated is done by public agencies, either the hydro districts, municipalities, or the Bureau of Reclamation. All power is distributed by the public power districts, REA lines, or municipalities.

This article is the second in a series on irrigation in Nebraska. Free copies of the first article, which examined the economic importance of irrigation to the state's economy for 1985, are available from the Bureau of Business Research. Call 402/472-2334 to order.

Recommended Reading

Farm Exports for the 1990s

The USDA's Economic Research Service (ERS) is predicting a stronger demand for U.S. farm exports in the 1990s. They are quick to caution, however, that the 1990s most likely will not rival the fast pace of the 1970s, when the volume of U.S. farm exports grew on average about 9 percent a year.

ERS economists guard their prediction in light of several crucial questions:

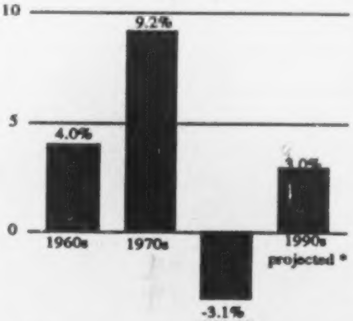
- *Will competitors increase production because of current high prices for commodities prompted by the U.S. drought?
- *Will developing counties let domestic food prices rise to levels that encourage their farmers to produce more food for their citizens?
- *Will the Soviet Union boost its demand for soybean meal and other high protein foodstuffs?
- *Will the outcome of current GATT negotiations remove barriers to agricultural trade?

The ERS economists observe that in recent years the U.S. has exported, on average, about one of every three acres of production—more that $16,000 per farm. Clearly when exports suffer, so does the U.S. farm sector.

The chart below shows a three percent growth rate projection for U.S. farm export volume in the 1990s.

For more information, see: "Export Outlook: What's Ahead for the 1990s" *Farmline*, USDA, ERS, Vol X, No. 4, April, 1989, pp. 4-7.

F. Charles Lamphear



* based on an ERS assessment of anticipated world supply and demand developments.

SOURCE: USDA's Economic Research Service

Rural Nebraska Loses Population

Provisional population estimates of Nebraska's counties for July 1, 1988 have been released by the U.S. Bureau of the Census. These estimates show that metropolitan counties and counties with medium size cities generally gained from 1980 to 1988, while rural counties lost population. There are exceptions to this trend. Seventeen counties grew, while the rest decreased in population

The fastest growing population was in the state's smallest county, Sarpy. The most populous county (Douglas, home of Omaha) grew 5.6 percent. Its gain of over 22,000 persons represented roughly two-thirds of the states' total growth. Lancaster County (city of Lincoln) experienced total growth of over 18,000 individuals, just under that of Douglas County. The jumps in these two counties pushed state growth to 2.1 percent despite numerous losses in smaller counties.

John S. Austin

Provisional 1988 County Population Estimates for Nebraska

(County estimates are rounded to the nearest hundred and state estimates to the nearest thousand. Percentages are based on unrounded numbers.)

State and County	July 1, 1988	April 1, 1980	% Change 1980-1988
Nebraska	1,602,000	1,569,825	2.1
Adams County	30,400	30,656	-0.9
Antelope County	8,400	8,675	-3.4
Arthur County	500	513	-8.2
Banner County	1,000	918	6.2
Blaine County	700	867	-16.1
Boone County	7,000	7,391	-5.9
Box Butte County	14,000	13,696	2.4
Boyd County	3,100	3,331	-6.5
Brown County	3,900	4,377	-10.8
Buffalo County	37,000	34,797	6.3
Burt County	8,300	8,813	-5.7
Butler County	9,100	9,330	-3.0
Cass County	22,100	20,297	9.1
Cedar County	10,700	11,375	-6.0
Chase County	4,600	4,758	-3.8
Cherry County	6,500	6,758	-3.8
Cheyenne County	10,000	10,057	-0.3
Clay County	7,600	8,106	-6.7
Colfax County	9,200	9,890	-7.2
Cuming County	11,000	11,664	-6.1
Custer County	12,800	13,877	-7.7
Dakota County	17,200	16,573	3.8
Dawes County	9,200	9,609	-4.6
Dawson County	20,700	22,304	-7.1
Deuel County	2,300	2,462	-6.8
Dixon County	6,600	7,137	-7.1
Dodge County	35,400	35,847	-1.3
Douglas County	419,400	397,038	5.6
Dundy County	2,700	2,861	-6.4
Fillmore County	7,400	7,920	-7.0
Franklin County	4,000	4,377	-9.2
Frontier County	3,400	3,647	-7.9
Furnas County	5,900	6,486	-9.5
Gage County	23,200	24,456	-5.3
Garden County	2,700	2,802	-3.3
Garfield County	2,100	2,363	-9.3
Gosper County	2,100	2,140	-3.4
Grant County	800	877	-7.6
Greeley County	3,200	3,462	-8.4
Hall County	48,600	47,690	1.8
Hamilton County	9,100	9,301	-2.7
Harlan County	4,000	4,292	-6.9
Hayes County	1,200	1,356	-8.3
Hitchcock County	3,900	4,079	-4.9
Holt County	13,100	13,552	-3.3
Hooker County	1,000	990	2.8
Howard County	6,400	6,773	-5.6
Jefferson County	9,100	9,817	-6.9
Johnson County	4,800	5,285	-8.5
Kearney County	6,700	7,053	-5.3
Keith County	8,700	9,364	-6.9
Keya Paha County	1,100	1,301	-13.0
Kimball County	4,500	4,882	-7.8
Knox County	10,600	11,457	-7.2
Lancaster County	211,600	192,884	9.7
Lincoln County	33,700	36,455	-7.6
Logan County	1,000	983	-0.2
Loup County	800	859	-6.6
McPherson County	600	593	-6.9
Madison County	32,300	31,382	3.0
Merrick County	8,500	8,945	-5.1
Morrill County	5,700	6,085	-6.1
Nance County	4,400	4,740	-7.5
Nemaha County	8,300	8,367	-0.3
Nuckolls County	6,200	6,726	-7.2
Otoe County	14,500	15,183	-4.4
Pawnee County	3,500	3,937	-9.9
Perkins County	3,600	3,637	-1.8
Phelps County	9,800	9,769	0.7
Pierce County	8,400	8,481	-0.8
Platte County	30,400	28,852	5.3
Polk County	5,900	6,320	-6.3
Red Willow County	12,600	12,615	-0.1
Richardson County	10,200	11,315	-9.9
Rock County	2,200	2,383	-8.7
Saline County	12,900	13,131	-1.5
Sarpy County	98,200	86,015	14.2
Saunders County	18,700	18,716	-0.1
Scotts Bluff County	37,100	38,344	-3.2
Seward County	15,900	15,789	0.9
Sheridan County	7,300	7,544	-3.1
Sherman County	3,900	4,226	-8.6
Sioux County	1,600	1,845	-12.1
Stanton County	6,600	6,549	0.8
Thayer County	7,000	7,582	-7.0
Thomas County	900	973	-4.0
Thurston County	7,100	7,186	-1.9
Valley County	5,600	5,633	-0.5
Washington County	16,000	15,508	3.3
Wayne County	9,800	9,858	-0.9
Webster County	4,500	4,858	-6.9
Wheeler County	1,000	1,060	-7.6
York County	14,900	14,798	0.4

Source: These estimates will be published August 1989 in *Current Population Reports*, Series P-26, No. 88-A "County Population Estimates: July 1, 1988, 1987, and 1986"

Per Capita Income or Average Income?

Several recent BIN articles on personal income have fueled debate among our readers. Their concern centers around the term *per capita personal income*. The basic question under fire is: What does per capita personal income really measure?

By definition, per capita income is one type of arithmetic average. It divides total income by total population, hence the expression per capita (or per person) income. It frequently is used for comparative purposes. But is per capita income a representative measure of average income?

Let's consider two areas called A and B. To simplify discussion, suppose areas A and B have the same total personal income for some accounting period. Let's further assume that area B's population exceeds area A's population. Based on the given information on population and personal income, we can say area A's per capita income exceeds area B's per capita income. Using per capita income to rank the areas, area A would be ranked above area B.

What more can we say about the income situation of the two areas? Can we say that the average income of area A exceeds the average income of area B? On the basis of definition, we can. Per capita income is one measure of average income.

There are other ways to calculate average income, however, such as the median. We would need individual income figures to calculate each area's median income, because the base for the median is the total number of income earners, rather than total population.

It is possible that area B's median income exceeds area A's median income, even though area A has higher per capita income. Moreover, it is possible that the mean average income of each area, another way to calculate average income, exceeds the area's median income, and so on.

There are several ways to calculate average income. The best average measure to use depends on the purpose. For example, if the average is supposed to reflect average well-being, then the per capita measure may be appropriate. Per capita personal income divides the total income pie into equal shares.

This does not mean, however, that every man, woman, and child actually received an equal share of the income pie. If the average is supposed to represent an area's average earned income, then per capita income would be inappropriate. In my judgment, the median would be most appropriate in this case.

The Bureau of Economic Analysis (BEA) of the U.S. Department of Commerce compiles the official income series that includes average per capita income statistics for states and counties.

BEA generates county personal income from several sources. The main source for the wage and salary component of personal income is state unemployment insurance (UI) records. Under the UI program, every covered private firm or government agency is required to file quarterly contribution reports with the appropriate state agency.

BEA must estimate wage and salary figures for the noncovered segment. In the private sector, farms, farm labor contractors, railroads, elementary and secondary schools with religious affiliation, religious membership organizations, and private households are treated as noncovered entities. In the public sector, the military is noncovered.

In addition to the wage and salary component, personal income includes proprietors' income; dividends, interest, and rent; and various transfer payments. BEA estimates the nonwage and salary components of personal income from various government records, including individual tax records.

In short, BEA's personal income series for states and counties is based on estimates that may contain error. The amount of error is likely much greater for sparsely populated rural counties than it is for their urban counterparts. Apart from interpretational concerns over per capita income, the possible presence of estimation error should lead to skepticism about the reliability of county per capita income statistics, especially for rural counties.

F. Charles Lamphear

NEBRASKA VEHICLE REGISTRATIONS

More than 1.5 million vehicles were registered in Nebraska between January 1, 1988 and December 31, 1988. The *1988 Annual Report of the Nebraska Department of Motor Vehicles* contains several categories for vehicle registration:

Type	Number Registered
Passenger	882,451
Truck	385,020
Trailer	160,844
Motorcycle	29,088
Mobile Home	28,095
Government	22,336
Dealer	9,504
Tax-Exempt	2,264
Bus	993
Snowmobile	918
Total	1,521,513

There are 43 subcategories to the above, ranging in size from one "local bus" registration to 850,115 "regular passenger" registrations. By combining similar subcategories, there were 17,588 nonresident and 11,112 prestige registrations. In addition, there were 1,472 amateur radio, 214 ex-POW, and 199 Pearl Harbor Survivor registrations.

Merlin W. Erickson

The Low Cost Place to Raise Our Kids

According to the USDA's Family Economics Research Group, the low cost location for raising children is the rural Midwest. It costs $93,704 at today's prices to raise a child from birth to age 18 in the Midwest.

The biggest expense item is housing, making up one-third of the total. Other major items include food at home, transportation, and other miscellaneous items. These three categories combined account for approximately one-half of total expenses.

Contrary to many conceptions, the high cost location is not the urban Northeast, but the rural West. The total cost in the rural West is $117,000. (Note: It is possible that some suburban areas are included in rural totals.)

John S. Austin

Review and Outlook

John S. Austin

National Outlook

The gurus of the soft landing concept had their dreams come true in the latest economic data. Price inflation has slowed, as has the growth rate of economic activity. Consequently, the Federal Reserve has eased monetary policy. Now the gloom and doom forecasters once again are postponing the start date for their predicted recession. The long awaited recession refuses to emerge. The one common thread among all schools of economic thought is an agreement that slow growth rates will characterize the next few quarters.

Advance estimates of the second quarter GNP figures were released by the Bureau of Economic Analysis (BEA). These figures will be revised over the next two months. Second quarter figures show a fairly weak gain in real GNP. The weak second quarter showing is no surprise, in contrast to first quarter performance figures that were inflated to account for last year's drought. Second quarter real GNP rose 1.7 percent. This contrasts with the rapid gain of 3.7 percent in the newly revised first quarter estimate. The first quarter drought adjustment was 2.2 percent. Without the adjustment, the first quarter would have grown a mere 1.5 percent.

Evidence of the second quarter's weakness was apparent even to a casual reader of the business pages. Retail sales were off substantially in the second quarter, down 0.4 percent in June following a 0.1 percent drop in May. Weaker auto sales precipitated the drop in retail sales figures. Retail sales without autos advanced 0.1 percent in June and 0.4 percent in May. In addition, industrial production was down 0.2 percent in June. Industrial production has wobbled in a narrow band, showing little to no growth in the first six months of this year.

Advances in the components of second quarter real GNP varied widely. Real personal consumption increased 1.1 percent, despite a 4.0 percent decrease in nondurable purchases. The latter decreases were mostly in food and energy. The investment sector jumped 7.6 percent, with an advance in investment in equipment offsetting decreases in private construction. Government purchases advanced 4.0 percent, with a big gain from nondefense federal purchases. That gain was due to an increase in the Commodity Credit Corporation inventory.

Although signs of weakness in economic activity normally would be viewed as bad news, exceptionally good news about prices offsets any tendency toward doomsaying. The Consumer Price Index (CPI) advanced a slight 0.2 percent in June. Food and energy prices decreased in June, with retail energy prices falling 1.0 percent. Nevertheless, the CPI was 5.2 percent above year ago levels. The Producer Price Index decreased 0.1 percent in June. Thus, the rising inflationary tide appears to have been temporarily broken.

There is some speculation that wholesale energy prices are headed downward. At this writing (late July), a major slump in wholesale oil prices is underway. Should

Table I
Income and Earnings in Nebraska*
(millions of dollars)

	Second Quarter 1987	Third Quarter 1987	Fourth Quarter 1987	First Quarter 1988	Second Quarter 1988	Third Quarter 1988	Fourth Quarter 1988	First Quarter 1989	% Change 1989:I vs Year Ago
Income									
Total Personal Income	22,151	21,895	24,562	24,004	24,900	23,921	24,347	25,937	8.1
Nonfarm	20,474	20,816	21,240	21,508	21,749	22,071	22,625	23,103	7.4
Farm	1,677	1,079	3,322	2,496	3,150	1,851	1,721	2,834	13.5
Earnings by Industry**									
Ag Serv., For., & Fish.	82	85	91	95	94	95	99	98	3.2
Mining	51	55	56	51	54	52	50	51	0.0
Construction	884	871	906	990	949	904	973	1,048	5.9
Manufacturing	2,134	2,206	2,253	2,338	2,340	2,393	2,395	2,462	5.3
Nondurable	1,067	1,094	1,121	1,141	1,162	1,175	1,182	1,229	7.7
Durable	1,067	1,113	1,132	1,197	1,178	1,218	1,214	1,224	3.1
TCU	1,560	1,597	1,612	1,647	1,676	1,723	1,709	1,758	6.7
Wholesale Trade	1,114	1,140	1,158	1,197	1,215	1,252	1,280	1,326	10.8
Retail Trade	1,508	1,522	1,540	1,581	1,607	1,639	1,671	1,712	8.3
FIRE	1,131	1,159	1,176	1,172	1,196	1,197	1,204	1,232	5.1
Services	3,223	3,292	3,404	3,358	3,484	3,636	3,851	3,859	14.9
Government	2,917	2,940	2,996	3,028	3,027	2,992	3,101	3,151	4.1
Federal, Civilian	452	462	468	469	466	471	480	492	4.9
Military	397	400	400	407	406	405	408	422	3.7
State & Local	2,069	2,078	2,129	2,152	2,155	2,116	2,213	2,236	3.9

TCU is transportation, communication, and utilities. FIRE is finance, insurance, and real estate
* All data are seasonally adjusted at annual rates
** Earnings is the sum of wages and salaries, other labor income, and income earned by sole proprietors
Source: Bureau of Economic Analysis, U.S. Department of Commerce

this slump continue or stabilize at current levels, it will be good news for domestic inflation.

With the easing of inflationary pressure coupled with weakness in some sectors of the economy, the Federal Reserve has eased monetary policy. As a consequence, a short-term improvement in the housing market has occurred. June housing starts reversed a nearly two year decline, advancing 7.0 percent.

All of the gains in housing starts were in multifamily structures. Single family housing starts were off a modest 0.2 percent. The boost in the housing market resulted from lower long-term interest rates. These rates had dropped even before the Federal Reserve eased monetary policy. Lower short-term interest rates resulted immediately from the easing in monetary policies, with even lower long-term rates likely.

It is possible that the improvement in the housing start figures will not be a mere one month blip. There is a regional aspect to the good news in housing. The bloated northeastern housing market is slumping. There are scattered reports of some decreases in home prices in the region.

The long downturn in housing starts that had characterized the data until June typifies prerecession conditions. It is natural to ask if the housing advance can be maintained. Income advances are good and are capable of supporting further gains in housing, as long as interest rates do not increase. Thus, the near-term demand for housing remains healthy.

A problem exists on the supply side. Home builders are reluctant to expand at this point in the business cycle. Most builders would be delighted to build a new house based on a firm order. Those same builders would be reluctant to build on speculation. The housing industry, particularly builders, get whipsawed by rapid changes in monetary policy.

If price advances remain moderate and interest rates remain low, the six and one-half year expansion will continue. Because of the advanced stage of the current expansion, however, rates of growth likely will be moderate.

Could future growth rates quicken? At this point in a business cycle, the usual limitations upon rapid expansion and growth are due to capacity constraints. 1988 was a good year for capacity expansion, and 1989 also could be good, depending on whether investors believe the gloom and doom forecasters. The result of added capacity is an easing of price pressures.

On the income side, we see high levels of employment. Those levels of employment, coupled with moderate wage advances, imply that an ample income pool will be available for purchases.

On the demand side, there has been some weakness in housing that could be reversed, and there is weakness in retail sales. The retail sales weakness has been especially noticeable in the automobile market.

A boost in short-term auto sales could come from the recent announcements of major price advances for the 1990 models. U.S. auto makers have cited the need for more required equipment as the reason for price increases. Thus, consumers may be stimulated to buy year-end 1989 models.

Early July figures tend to support this speculation. In the first ten days of July, auto sales advanced 8.9 percent over year ago levels, and in the second ten days they advanced 2.4 percent over year ago levels. At best, auto sales stimulated by announcements of higher prices for the next model year will shift sales from the fourth quarter into the third quarter.

In the longer term, auto purchases are determined by three major factors. First, the availability of after tax income to the consumer; second, the condition of the stock of automobiles held by the public; and third, the relative price and terms of the auto purchase.

We've already indicated that incomes appear to be in good shape. Stocks of auto-

Table II
Employment in Nebraska

	Revised May 1989	Preliminary June 1989	June % Change vs. Year Ago
Place of Work			
Nonfarm	715,799	718,713	3.8
Manufacturing	97,695	98,750	3.4
Durables	47,610	48,434	2.5
Nondurables	50,085	50,316	4.2
Mining	1,813	1,830	4.5
Construction	27,365	28,244	6.7
TCU*	47,323	47,563	5.3
Trade	184,192	183,815	3.2
Wholesale	52,845	52,811	4.4
Retail	131,347	131,004	2.8
FIRE**	49,093	49,569	2.8
Services	166,010	167,842	5.3
Government	142,308	141,100	2.2
Place of Residence			
Civilian Labor Force	813,418	821,217	-0.15
Unemployment Rate	2.5%	3.6%	

*Transportation, Communication, and Utilities
**Finance, Insurance, and Real Estate

Source: Nebraska Department of Labor

Table III
Price Indices

	June 1989	% Change vs. Year Ago	YTD % Change vs. Year Ago
Consumer Price Index - U* (1982-84 = 100)			
All Items	124.1	5.2	5.0
Commodities	117.2	5.5	5.1
Services	131.6	4.9	4.9
Producer Price Index (1982 = 100)			
Finished Goods	114.1	5.7	5.6
Intermediate Materials	112.6	4.8	6.1
Crude Materials	103.9	5.8	8.1
Ag Prices Received (1977 = 100)			
Nebraska	154	2.0	12.0
Crops	137	10.5	36.7
Livestock	166	-1.2	2.5
United States	146	6.6	12.4
Crops	137	7.9	21.3
Livestock	155	5.4	6.1

U* = All urban consumers
Source: U.S. Bureau of Labor Statistics

mobiles held by the public are relatively new and are in very good condition. Relative prices may be high with the new models. If so, auto sales will depend on how good a deal auto dealers can cut with their customers. Those terms will depend, in part, on how anxious auto manufacturers are to increase sales volumes.

Further weakness in future auto sales is also evident in an otherwise buoyant report on consumer confidence. In May, only 6.5 percent of the respondents to the Conference Board survey said they would buy a car in the next six months. That figure is the lowest level since the first quarter of 1983. In June 1988, almost 9 percent of those surveyed said that they would buy a car.

The emerging picture is of a potential auto buyer who is able, but who does not need, to buy. The prospective buyer's own automobile is relatively new and can deliver an additional year or two of service. The buyer will deal if prices and terms are favorable. As a result, we do not expect a big rebound in auto sales. It is conceivable that the American consumer may decide to increase his or her savings rate.

In summary, there may be a rebound in housing, but it is difficult to see an improvement in auto sales. Consequently, the chances of large economic growth rates in the near future are slim at best.

Nebraska Outlook

In contrast to construction activity in the U.S. so far this year, Nebraska construction activity is doing well. According to the F.W. Dodge report, accumulated total square footage of all buildings through June has advanced 8.6 percent over last year. The number of total construction projects, including nonbuilding construction, has shown a 13.4 percent gain through June.

Recent rains in the state have helped some areas catch up on moisture conditions. According to the Nebraska Agriculture Statistics Service, only one of its eight reporting regions in Nebraska, the northwest, now reports less than 50 percent of normal precipitation between April 1 and July 21 of this year.

Earlier this year, several regions were below the 50 percent mark. While topsoil

Table IV
City Business Indicators
April 1989 Percent Change from Year Ago

The State and Its Trading Centers	Employment (1)	Building Activity (2)
NEBRASKA	1.8	-3.5
Alliance	2.1	210.2
Beatrice	1.4	-23.2
Bellevue	1.9	-32.6
Blair	1.9	1,205.5
Broken Bow	1.1	-34.8
Chadron	2.3	112.9
Columbus	2.4	75.0
Fairbury	2.4	-89.5
Falls City	0.8	-22.2
Fremont	2.1	38.2
Grand Island	2.1	-12.1
Hastings	2.3	-11.6
Holdrege	1.2	368.3
Kearney	2.1	-71.9
Lexington	3.2	223.2
Lincoln	1.8	-12.7
McCook	0.7	-92.3
Nebraska City	1.5	-44.4
Norfolk	2.2	-21.8
North Platte	2.1	-9.3
Ogallala	1.1	11.8
Omaha	1.9	-1.2
Scottsbluff/Gering	1.3	112.8
Seward	2.3	-48.4
Sidney	2.7	23.8
South Sioux City	1.0	488.0
York	1.2	-23.8

(1)As a proxy for city employment, total employment (labor force basis) for the county in which a city is located is used

(2)Building activity is the value of building permits issued as a spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Cost Index is used to adjust construction activity for price changes

Sources: Nebraska Department of Labor and reports from private and public agencies

Figure I
City Business Index
April 1989 Percent Change from Year Ago

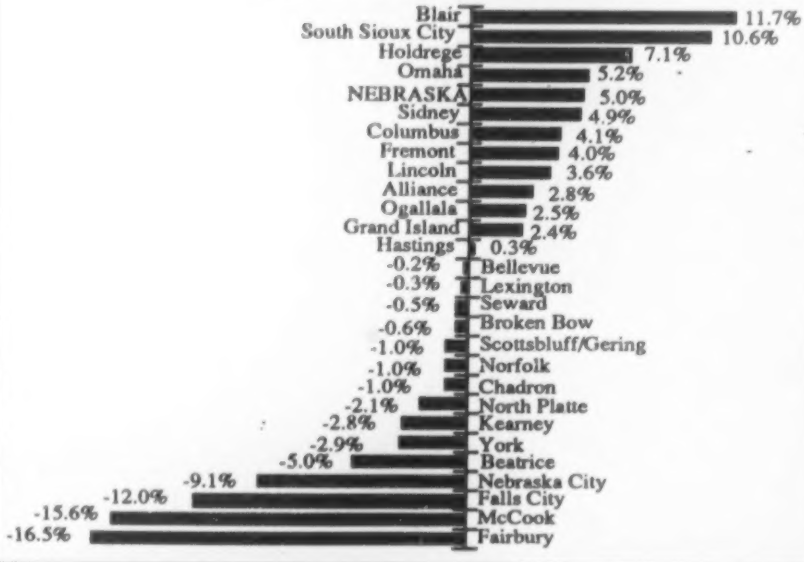
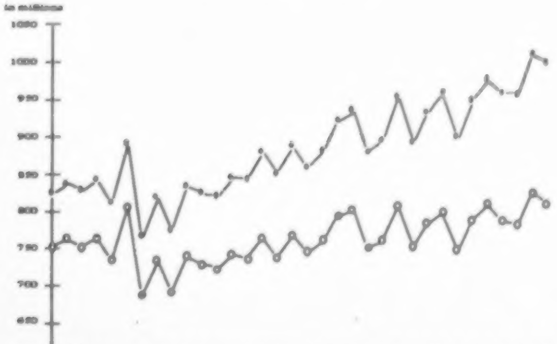


Table V
Net Taxable Retail Sales of Nebraska Regions and Cities

Region Number and City (1)	City Sales (2) April 1989 (000s)	City Sales (2) % Change vs. Year Ago	Region Sales (2) April 1989 (000s)	Region Sales (2) % Change vs. Year Ago	YTD % Change vs. Year Ago
NEBRASKA	$851,039	15.7	$977,087	13.6	8.8
1 Omaha	302,505	16.0	375,987	13.7	10.5
Bellevue	12,524	7.5	*	*	*
Blair	4,362	1.8	*	*	*
2 Lincoln	117,985	13.6	137,161	12.1	5.4
3 South Sioux City	4,399	9.2	6,537	8.5	-2.2
4 Nebraska City	3,232	-11.2	17,215	1.4	1.9
6 Fremont	15,546	9.0	28,786	5.1	2.6
West Point	2,904	6.6	*	*	*
7 Falls City	1,732	-20.9	8,216	-10.6	-2.5
8 Seward	4,056	9.4	13,604	-2.6	0.8
9 York	6,346	0.3	15,256	15.2	10.9
10 Columbus	13, 991	6.1	26,252	5.6	7.3
11 Norfolk	17,618	3.6	32,871	5.3	7.9
Wayne	2,341	-18.1	*	*	*
12 Grand Island	33,473	10.4	47,318	11.1	9.9
13 Hastings	15,273	5.2	24,132	0.1	6.9
14 Beatrice	7,141	-4.9	16,443	-5.1	1.1
Fairbury	2,521	-10.3	*	*	*
15 Kearney	18,911	11.1	27,024	9.6	11.3
16 Lexington	4,817	-12.1	14,935	-0.9	9.4
17 Holdrege	4,090	3.5	7,519	-0.3	5.7
18 North Platte	14,717	-0.5	18,550	-0.8	3.8
19 Ogallala	5,530	8.9	11,977	10.4	11.0
20 McCook	7,466	-3.0	10,580	-5.7	4.3
21 Sidney	3,667	11.8	7,356	1.5	8.0
Kimball	1,435	-14.8	*	*	*
22 Scottsbluff/Gering	14,356	-6.9	23,878	10.3	11.2
23 Alliance	4,945	-3.3	12,317	-5.7	3.6
Chadron	2,280	-8.0	*	*	*
24 O'Neill	4,217	4.5	12,828	5.5	12.6
Valentine	2,128	3.2	*	*	*
25 Hartington	1,600	10.6	8,272	5.2	1.2
26 Broken Bow	3,566	7.9	12,134	5.1	6.8

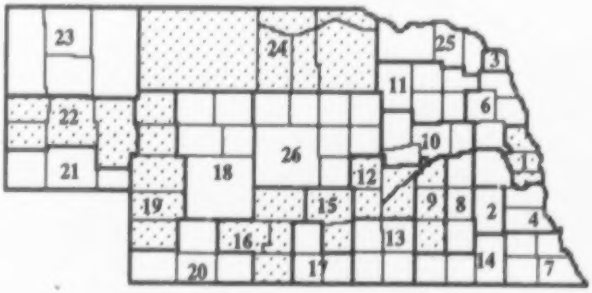
(1)See region map
(2)Sales on which sales taxes are collected by retailers located in the state. Region totals include motor vehicle sales
* Within an already designated region
Compiled from data provided by the Nebraska Department of Revenue

Figure II
Nebraska Net Taxable Retail Sales
(Seasonally Adjusted)



(1) The Consumer Price Index (1982-84 = 100) is used to deflate current dollars into constant dollars

Figure III
Region Sales Pattern
YTD as Percent Change from Year Ago



Shaded areas are those with sales gains above the state average. See Table V for corresponding regions and cities

conditions generally have improved across the state, subsoil moisture remains 90 percent short. That implies that shortfalls in precipitation during the remainder of this growing season could severely impact dry land crops.

First quarter personal income figures are in for Nebraska. The data produced by the Bureau of Economic Analysis of the U.S. Department of Commerce are reported in Table I. Total personal income advanced 8.1 percent in the first quarter versus year ago.

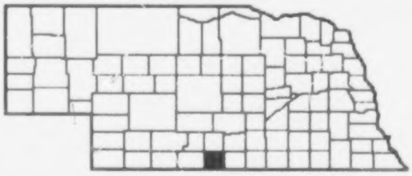
Farm personal income percentage gains of 13.5 percent outpaced the total. Table I also displays the volatility of Nebraska farm income. Farm personal income nearly doubled between second quarter 1987 and second quarter 1988. The farm income series is influenced heavily by weather conditions and the timing and degree of federal agricultural payments to farmers.

In the nonfarm income area, industries where earnings posted the highest gains were wholesale trade, at 10.8 percent, and services, at 14.9 percent. Total nonfarm personal income advanced 7.4 percent from the previous year.

Retail sales continued to advance in Nebraska throughout April. On a year-to-date basis, the state as a whole advanced 8.8 percent. (See Table V.) The Omaha, York, Kearney, Ogallala, Scottsbluff/Gering, and O'Neill regions led the state with double digit gains through April.

County of the Month

Harlan



Alma--County Seat

Size of county: 575 square miles, ranks 53rd in the state

Population: **4,000** (estimated) in 1988, a change of -6.9 percent from 1980

Median age: 39.0 years in Harlan County, 29.7 years in Nebraska in 1980

Per capita personal income: $14,073 in 1987, ranks 44th in the state

Net taxable retail sales ($000): $15,266 in 1988, a change of +6.3 percent from 1987; $4,588 during January-April 1989, a change of +3.1 percent from the same period one year ago

Number of business and service establishments: 118 in 1986; 68.6 percent had less than five employees

Unemployment rate: 2.8 percent in Harlan County, 3.6 percent in Nebraska for 1988

Nonfarm employment (1988):

	State	**Harlan County**
Wage & salary workers	688,146	901
	(percent of total)	
Manufacturing	13.8%	1.6%
Construction and Mining	3.8	1.6
TCU	6.5	4.2
Retail Trade	18.5	21.1
Wholesale Trade	7.3	17.5
FIRE	7.0	5.1
Services	23.0	13.3
Government	20.1	35.6
Total	100.0%	100.0%

Agriculture:

Number of farms: 465 in 1987, 453 in 1982

Average farm size: 686 acres in 1987

Market value of farm products sold: $55.5 million in 1987 ($119,400 average per farm)

Sources: U.S. Bureau of the Census, U.S. Bureau of Economic Analysis, Nebraska Department of Labor, Nebraska Department of Revenue

Merlin W. Erickson

Business in Nebraska

PREPARED BY BUREAU OF BUSINESS RESEARCH
Association for University Business & Economic Research

Business in Nebraska is issued as a public service and mailed free of charge upon request to 200 CBA, University of Nebraska-Lincoln, Lincoln, NE 68588-0406. Copyright 1989 by Bureau of Business Research, University of Nebraska-Lincoln.

August 1989, Volume 44 No. 539

University of Nebraska-Lincoln-- Martin Massengale, *Chancellor*
College of Business Administration--Gary Schwendiman, *Dean*

Bureau of Business Research
F. Charles Lamphear, *Director*
Merlin W. Erickson, *Research Associate*
Margo Young, *Editorial Assistant*
John S. Austin, *Statistical Coordinator*
David D. DePraiter, *Statistical Technician*
Jodi Benson, *Staff Secretary*
Barbara Sumsion, *Composing Technician*
Lisa Darlington, *Staff Secretary*

The University of Nebraska-Lincoln does not discriminate in its academic, admission, or employment programs and abides by all federal regulations pertaining to same.

Nonprofit Org.
U. S. Postage
PAID
Lincoln, Nebraska
Permit No. 46

CONGRESSIONAL INFO SERVIC270238
SRI BR
4520 EAST-WEST HWY
BETHESDA, MD 20814

(17860-1

Business In Nebraska

September 1989
Vol. 45 No. 540

Prepared by the Bureau of Business Research
200 College of Business Administration
University of Nebraska-Lincoln
Lincoln, NE 68588-0406
402/472-2334

Banking in Nebraska: Part 1

Andrew Pitcher
Graduate Assistant, UN-L Bureau of Business Research

Nebraska commercial banks were ranked first of all states in terms of return on assets at the beginning of the decade. By 1985, however, Nebraska had fallen to 40th place among the states. Nebraska's ranking since has risen to 15th place in 1988. This paper provides an overview of changes in Nebraska commercial bank performance during the 1980s. It is the first in a series analyzing trends in Nebraska banking. The series of articles will provide some insight into changes in the economic viability and financial stability of Nebraska commercial banks in the 1980s. Savings and loan institutions are not included in the Federal Deposit Insurance Corporation (FDIC) data used and are not discussed. Future articles will focus on the savings and loan crisis and agricultural credit.

Contribution of the Banking Industry to Nebraska's Economy

The banking industry makes a vital contribution to the Nebraska economy in a number of ways. The industry directly employs persons and adds value to Nebraska's output. Banking also makes an indirect contribution to employment and state income though banks' use of ancillary businesses such as armored cars or computer installation and maintenance. The most important contribution of banking relates to its function. Banking provides a means of allocating resources to their most efficient use. Through banking, savings of individuals and firms are loaned to customers who use the funds to expand their businesses or enhance their quality of life. Without an efficient banking industry, the state's resources could not be allocated efficiently. It is difficult to measure the impact of an efficient banking industry. All too often, it has become painfully apparent that when a bank fails, the economic welfare of the community served by that bank also can be threatened.

The percentage of Nebraskans employed in commercial banking is relatively small, approximately 1.6 percent of the state's nonfarm workforce in 1988. Although the number of commercial banks in Nebraska is at about the same level it was two decades ago, the number of commercial bank employees rose over 60 percent to 10,823 full-time equivalent employees over the same period. The increase in bank employment reflects the rapid growth and structural change of the whole financial sector.

Nebraska Banking in Transition

The 1980s have been a period of transition for Nebraska banks. During the decade, the banking industry has faced

State Economic Scoreboard

Change from same month one year ago.
See Review and Outlook on page 8 for more details.

	State	Metro+	Nonmetro
Motor Vehicle Sales (May) Constant $	↑ 11.5%	↑ 13.5%	↑ 9.7%
Nonmotor Vehicle Sales (May) Constant $	↑ 4.2%	↑ 4.0%	↑ 4.3%
Building Activity (May) Constant $	↓ -12.3%	↓ -14.6%	↓ -8.9%
Employment (July)	↓ -0.8%	↓ -1.4%	↓ -0.1%
Unemployment Rate* (July)	↓ 3.4%	↓ 3.5%	↓ 3.2%

+Omaha and Lincoln. *Unemployment is this month's rate, not a percent change from year ago.

Figure 1
Return on Average Assets

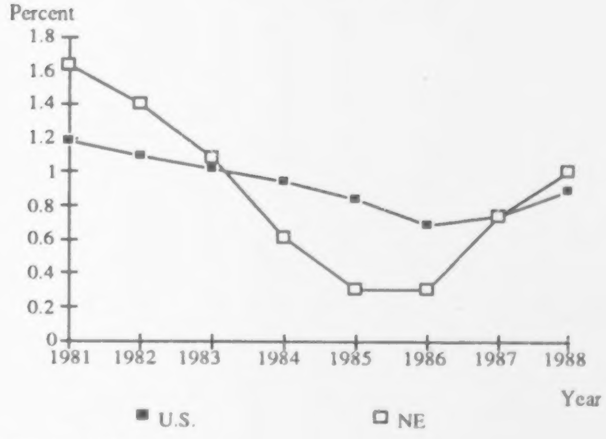
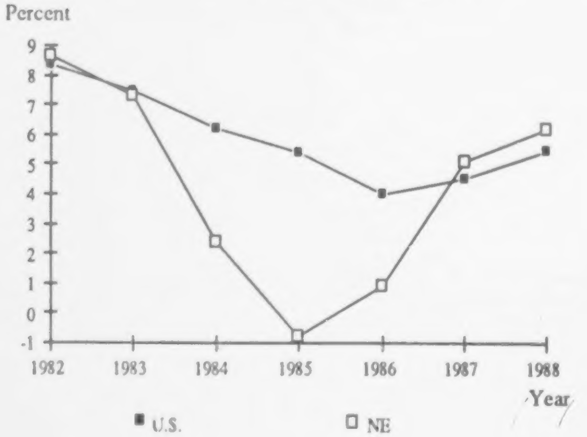


Figure 2
Retained Earnings to Average Total Equity



Source: FDIC

considerable change. The change has taken three basic forms:

*regulatory change,

*technological change, and

*economic structural changes.

Regulatory Change

Changes in the industry have been brought by changes in the way banks are regulated. Banking, traditionally one of the most regulated industries, has been deregulated in a move toward freer markets. Deregulation has brought changes in restrictions on banking activities, the geographic areas in which banks may operate, and reductions in controls on interest rates. The objective of banking deregulation was to allow a more competitive environment, thus improving the efficiency of the industry.

Technological Change

Information technology has advanced at an astonishing speed. Innovations in the area include the introduction of electronic banking and telecommunications. The result is faster and more accurate information systems.

Economic Structural Changes

Over the last decade, conditions in the agricultural, energy, and commercial real estate sectors have varied widely as the United States economy went through recession and then expansion. Commercial banks depend heavily on these sectors for lending and have had to adjust to changes in the structure of the economy.

Although Nebraska bank performance is influenced to a large extent by trends in the national economy, the structure of Nebraska's economy and state bank regulation will affect Nebraska bank performance. Given Nebraska's agricultural base and the prolonged recession of the agricultural industry in the 1980s, banks with a high degree of their loan portfolio in agricultural lending suffered greater losses.

These changes in regulation, technology, and economic structure affected Nebraska banking in several areas. Analysis of profitability, capital adequacy, lending, growth, and county banking patterns reveals several trends in Nebraska banking over the past decade.

Profitability Analysis

In evaluating a bank's performance, the return on average assets (ROA) ratio relates the profitability of the bank to the resources the bank controls. Figure 1 shows the ROA for Nebraska commercial banks over the period 1981 to 1988. The graph illustrates the sharp drop in Nebraska banking profitability, compared to national levels, that occurred in the mid-1980s. It appears that a recovery is now underway, with Nebraska banks earning an average ROA of over 1 percent. These earnings compare favorably to the 0.89 percent ROA for the nation's commercial banks during 1988. Factors contributing to the increase in Nebraska bank profitability include an increase in net interest and a reduction in overhead expenses. The increase in Nebraska bank profitability is mainly attributable, however, to a reduced provision for loan and lease losses.

There is a diverse range of bank ROA performance within the state. Table 1 presents the three year average return on average assets for Nebraska counties with commercial banks for the period 1986 to 1988. The metropolitan counties have not fared any better than the rural counties. Lancaster and Douglas counties ranked 38th and 42nd respectively over the period.

Another indicator of bank performance is return on average equity (ROE). ROE measures the percentage return a bank earns on an average stockholder's equity. ROE will vary with the extent that banks use debt financing. Therefore, a bank that has retained a large portion of its earnings may have a low ROE, but a high ROA. ROE for Nebraska banks rose on average to 7.5 percent in 1987 and 10.8 percent in 1988. ROE for Nebraska banks is broadly in line with national levels, despite Nebraska banks having a lower level of debt financing compared to other states.

It is also worth noting that the range of profitability between size categories has narrowed. In 1986, the ROA for Nebraska banks with assets between $0 and $25 million was 0.33 percent, compared to 0.58 percent for banks with assets between $25 million and $100 million, and 0.85 percent for banks with assets of over $100 million. In 1988, the comparable results were a ROA of 1.31 percent, 1.34 percent, and 1.17 percent respectively. The narrower range of bank profitability is probably due to the decreased number of smaller banks through merger or liquidation.

Capital Adequacy

A problem in the past for banks has been to retain sufficient capital. As profitability fell in 1985 and 1986, banks retained less of the income necessary to maintain their capital.

Without adequate capital, banks face the risk of being overexposed to debt financing, presenting greater risk to existing shareholders and depositors. Whereas shareholders' dividends may vary according to profitability, fixed interest payments are required even if the bank has an unprofitable year. Also, banks lose the advantage of being able to deduct the interest from their tax liability when there is no profit.

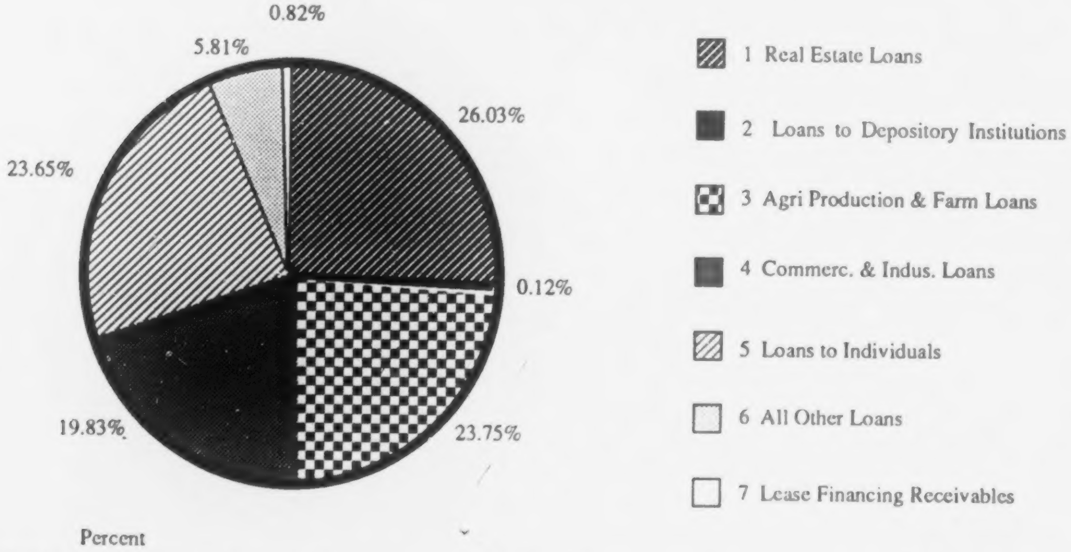
Figure 2 shows the percentage of retained eanings to average total equity. As a result of declining profitability, Nebraska banks' retained earnings fell dramatically between 1983 and 1985. In 1985 Nebraska commercial banks, on average, experienced negative retained earnings. Over the same period, Nebraska commercial banks were paying an extremely high level of dividends. A relatively high level of dividends in the face of low profit levels suggests that some Nebraska banks were using capital to pay dividends. Such a policy can be a damaging practice. By 1987, retained earnings to average total equity was back in line with national levels. Dividend payments

Table 1
Nebraska Commercial Banks Percentage Return on Average Assets
By County

COUNTY	1986	1987	1988	Three Year Average	Rank
Stanton	1.54	2.23	1.27	1.68	1
Deuel	1.61	1.63	1.15	1.46	2
Valley	1.33	1.53	1.33	1.39	3
Sherman	0.68	1.54	1.84	1.35	4
Colfax	0.79	1.60	1.53	1.31	5
Holt	1.29	1.09	1.36	1.25	6
Hooker	-0.69	1.98	2.28	1.19	7
Frontier	0.98	1.35	1.23	1.19	8
Howard	1.19	1.12	1.10	1.14	9
Butler	1.08	0.91	1.35	1.11	10
Dundy	0.93	1.14	1.26	1.11	11
Pierce	0.72	1.25	1.33	1.10	12
Hayes	0.87	1.29	1.12	1.09	13
Cuming	0.99	1.15	1.08	1.07	14
Polk	0.91	0.97	1.33	1.07	15
Greeley	1.06	0.95	1.12	1.04	16
Burt	0.54	1.18	1.42	1.04	17
Pawnee	0.41	1.20	1.50	1.03	18
Cass	0.95	1.00	1.13	1.03	19
Nance	0.52	1.32	1.23	1.02	20
Franklin	0.75	1.20	1.04	1.00	21
Knox	0.91	0.88	1.16	0.99	22
Boyd	1.06	0.76	1.04	0.95	23
Wayne	0.60	1.11	1.12	0.94	24
Hall	0.74	0.91	1.09	0.91	25
Cherry	-0.14	1.15	1.72	0.91	26
Dixon	0.75	0.99	0.98	0.91	27
Seward	0.68	0.96	1.03	0.89	28
Otoe	0.39	1.06	1.19	0.88	29
Jefferson	0.77	0.58	1.28	0.88	30
Rock	0.34	1.12	1.12	0.86	31
Saline	0.59	0.89	1.07	0.85	32
Merrick	0.28	1.12	1.12	0.84	33
Cedar	-0.32	1.15	1.65	0.83	34
Boone	0.33	0.97	1.17	0.83	35
Buffalo	0.17	0.87	1.40	0.82	36
Antelope	-0.02	1.00	1.45	0.81	37
Lancaster	0.77	0.66	1.00	0.81	38
Adams	0.51	0.85	1.06	0.81	39
Furnas	0.32	0.96	1.09	0.79	40
Washington	0.54	1.07	0.76	0.79	41
Douglas	0.74	0.73	0.88	0.78	42
Thayer	0.78	1.11	0.46	0.78	43
Saunders	0.65	0.69	1.00	0.78	44
Webster	0.60	0.91	0.80	0.77	45
Phelps	0.08	1.27	0.89	0.74	46
Perkins	0.69	0.56	0.82	0.69	47
Dawes	0.02	0.68	1.36	0.69	48
Gage	0.28	0.87	0.89	0.68	49
Madison	0.09	0.80	1.13	0.68	50
Blaine	1.02	0.59	0.41	0.67	51
Hamilton	0.58	-0.07	1.39	0.63	52
Platte	0.37	0.56	0.97	0.63	53
Sheridan	-0.13	0.42	1.58	0.62	54
Kearney	0.57	0.72	0.58	0.62	55
Dakota	0.27	0.79	0.74	0.60	56
Richardson	0.94	0.33	0.51	0.59	57
Custer	-0.06	0.66	1.17	0.59	58
Nemaha	0.05	0.77	0.94	0.58	59
Dodge	-0.41	0.71	1.43	0.58	60
Keya Paha	0.22	0.65	0.75	0.54	61
Logan	1.24	1.32	-1.02	0.52	62
Cheyenne	0.13	0.26	1.10	0.50	63
Lincoln	-0.48	0.65	1.25	0.47	64
Thomas	-0.18	0.47	1.05	0.45	65
Nuckolls	-0.33	0.96	0.70	0.44	66
Brown	0.57	-0.48	1.13	0.41	67
York	-0.35	0.32	1.22	0.40	68
Clay	-0.19	0.50	0.83	0.38	69
Hitchcock	-1.00	0.81	1.32	0.38	70
Red Willow	0.09	0.15	0.84	0.36	71
Garden	0.49	-0.01	0.39	0.29	72
Harlan	-1.03	0.70	1.10	0.26	73
Sarpy	0.36	0.31	0.10	0.26	74
Kimball	-0.63	0.35	1.00	0.24	75
Johnson	-1.29	0.68	1.32	0.24	76
Garfield	-0.94	0.71	0.93	0.23	77
Dawson	-0.10	-0.06	0.69	0.18	78
Fillmore	-0.95	0.74	0.68	0.16	79
Thurston	-2.60	1.55	1.46	0.14	80
Keith	-0.03	-0.47	0.75	0.08	81
Gosper	-1.13	0.25	0.79	-0.03	82
Wheeler	-0.75	0.22	0.35	-0.06	83
Morrill	-2.54	0.74	1.45	-0.12	84
Chase	-0.53	-1.02	0.71	-0.28	85
Box Butte	0.02	-1.45	0.40	-0.34	86
Scotts Bluff	-0.90	-0.02	-0.83	-0.58	87
Banner	-2.10	0.68	-0.49	-0.64	88
Grant	-3.10	0.22	-0.13	-1.00	89

Note: This table includes only those counties with banks that filed reports with the FDIC in the years 1986, 1987, and 1988. Therefore, Loup, McPherson, and Sioux are not included

Figure 3
1988 Average Distribution of Lending Portfolio for Nebraska Banks



and retained earnings now have returned to a more conservative level.

Lending

The Nebraska banking loan portfolio contains a relatively high proportion of lending to the agricultural sector. The high proportion of agricultural lending reflects Nebraska's agricultural economic base. Dependence on agricultural lending for income is risky. Agriculture, by nature, always has been subject to wide income swings. Also, a bank loan portfolio that is geographically or structurally undiversified is risky.

Figure 3 shows the average distribution of the lending portfolio for Nebraska commercial banks in 1988. Nearly one quarter of the lending porfolio consists of agricultural production or farm loans. This contrasts with the national average, where only 1.7 percent of the lending portfolio consisted of agricultural lending in 1988. Nebraska commercial banks, on average, have reduced their agricultural lending considerably. In 1981, nearly 40 percent of the average lending portfolio for Nebraska commercial banks was devoted to agricultural lending.

Figure 4 shows a large reduction in the level of Nebraska commercial banks' loans and leases as a percentage of total assets over the period 1979 to 1988. Although the proportion of lending is still very low, it has been increasing in recent years.

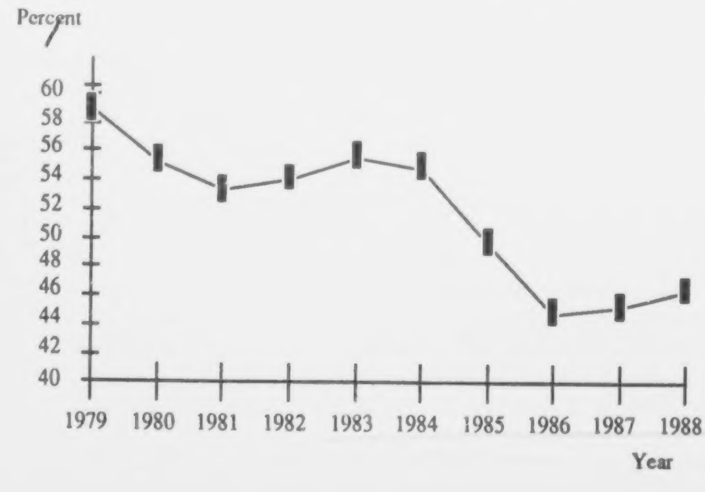
Growth

One major trend at the state and national level during the 1980s is a major slowdown in the rates of growth in the banking industry. The slowdown may represent a reaction to an unsustainable level of growth in the late 1970s. With banking deregulation, banks face stiffer competition for deposits. There also has been a reduction in the number of banks, from 461 in Nebraska in 1982 to 412 in 1988. Consolidation and liquidation have reduced the number of smaller banks.

Conclusion

Nebraska commercial banks are in a period of transition. Although the downturn in the agricultural economy has created difficulties for many banks, the outlook is brighter than a year or two ago, particularly for the smaller community banks. Changes in the structure of the banking industry have created an environment that, with fewer banks, is more competitive and efficient but, as evident from the variations in commercial bank profitability, less predictable.

Figure 4
Loans and Leases as Percent of Total Assets



Economic Growth Patterns in the Tri-Counties Region

James R. Schmidt
Associate Professor of Economics

Christine M. Tarsney
Undergraduate Research Associate

A leading example of a regional economic center in nonmetropolitan Nebraska is the county group of Adams, Buffalo, and Hall in the middle part of the state. Led by the flagship cities of Hastings, Kearney, and Grand Island, this area is the focal point of the central Nebraska economy. This county group also accounts for a significant portion of the state's economic activity.

This article examines growth patterns of the county economies in Adams, Buffalo, and Hall during the 1980s, a decade of severe agricultural and nonagricultural recessions followed by an unprecedented recovery in farm income. Comparisons of economic activity are made within the three county group and with the metro and nonmetro areas of Nebraska. Although the phrase *Tri-Cities* is popular for the region, the more general designation of *Tri-Counties* is used in this article. This inquiry is conducted at the county rather than city level because broad activity measures such as personal income, employment, and total retail sales are reported only on a county basis. Because the three leading cities of the region dominate their respective county economies, however, the analysis should be of interest even to parties whose primary concern is with city-specific trends.

The information given below shows that since 1980 the Tri-Counties region has lagged the metro area of Nebraska in the growth rate of all but two of the broad economic indicators studied. The metro area consists of Douglas, Lancaster, and Sarpy counties. Tri-Counties performance shows a mixture of leads and lags in the growth rates of the chosen indicators compared to nonmetro Nebraska; the region has outpaced nonmetro Nebraska on most fronts. Buffalo County emerges as the growth leader within the region in many of the indicators. Adams County consistently trails the other two counties, while Hall leads the region in several indicators but trails in others.

Personal Income and Population

Personal income is the most inclusive measure of economic activity available on a county basis. The latest year for which figures are available is 1987. Table 1 contains personal income histories of the Tri-Counties, the counties in the region, metro and nonmetro areas of Nebraska, and Nebraska. The income figures are in real terms (deflated by a price index to control the effects of inflation over the period). Only figures for 1980, 1984, and 1987 are given. The growth rates calculated for the 1980-1987 span are average annual growth rates.

The Tri-Counties region began the decade with a real personal income level of $1.237 billion, 6.9 percent of the state total. From 1980 through 1987, the region's income grew at an average annual rate of 1.3 percent, well below the growth rates of nonmetro and metro Nebraska. By 1987 the portion of statewide personal income garnered by the region had dropped to 6.7 percent.

A wide disparity of income growth rates occurred among the three counties of the region. Buffalo County enjoyed a comparatively strong growth rate of 2.4 percent, surpassing the rates of the the metro and nonmetro portions of the state. Hall and Adams trailed Buffalo in income growth, with rates of 1.2 percent and 0.6 percent, respectively. The level of income in Buffalo surpassed that in Adams in 1982.

Nonfarm income in the region grew at a paltry 0.4 percent rate on an average annual basis, far below the growth rates of the state and the state's metro area. The region outperformed nonmetro Nebraska, which declined slightly over the time span. Clearly, Nebraska's woes in the nonfarm economy during the 1980s have been concentrated in the nonmetro portion of the state. Although the Tri-Counties region has performed better than the balance of the nonmetro area, its position compared to the metro area continues to erode. Farm income growth has been the dominant force in moving the region forward (in real terms) and the exclusive force propelling nonmetro Nebraska.

Table 1
County and Area Personal Income and Population

	Adams	Buffalo	Hall	Tri-Counties	Metro NE	Nonmetro NE	State
Total Income (millions)							
1980	$366.3	$338.0	$532.6	$1,236.8	$8,374.0	$9,331.6	$17,705.6
1984	371.0	384.7	564.6	1,320.2	8,967.8	10,068.0	19,035.8
1987	380.0	395.7	576.4	1,352.0	9,567.0	10,499.7	20,066.6
AAGR*	0.6	2.4	1.2	1.3	1.9	1.8	1.8
Nonfarm Income (millions)							
1980	$341.2	$346.8	$534.4	$1,222.4	$8,353.5	$8,772.4	$17,125.9
1984	340.7	361.9	539.3	1,241.8	8,941.5	8,824.7	17,766.3
1987	342.2	366.4	543.0	1,251.7	9,522.0	8,707.8	18,229.8
AAGR*	0.1	0.8	0.2	0.4	1.9	-0.1	0.9
Per Capita Income							
1980	$11,909.0	$9,653.0	$11,121.0	$10,882.0	$12,353.0	$10,424.0	$11,255.0
1984	11,866	10,273	11,421	11,175	12,700	11,198	11,859
1987	12,505	10,781	11,824	11,672	13,287	12,008	12,585
AAGR*	0.7	1.7	0.9	1.1	1.1	2.1	1.6
Population							
1980	30,757	35,010	47,886	113,653	677,874	895,236	1,573,110
1984	31,262	37,445	49,436	118,143	706,149	899,098	1,605,247
1987	30,386	36,702	48,743	115,831	720,040	874,376	1,594,416
AAGR*	-0.2	0.7	0.3	0.3	0.9	-0.3	0.2

*** - Average annual growth rate from 1980 through 1987**
Source: Bureau of Economic Analysis, U.S. Department of Commerce

Buffalo County led the region's counties in nonfarm income growth, with an average annual rate of 0.8 percent. This figure was just below the state growth rate of 0.9 percent, but well below the metro growth rate. Hall and Adams generated growth rates of 0.2 and 0.1 percent, respectively.

The region's growth rate in real per capita income of 1.1 percent matched that of metro Nebraska, but lagged the state's growth rate of 1.6 percent and nonmetro Nebraska's growth rate of 2.1 percent. (For an interpretative note on per capita income, see the August 1989 issue of *Business in Nebraska*.) With the significant growth gap between the region and the state, per capita income in the region fell from 96.7 percent of the state level in 1980 to 92.7 percent in 1987. The equivalence of the Tri-Counties and metro growth rates reflects the metro area's higher growth rate in total income being balanced by a higher growth rate in population, 0.9 percent versus 0.3 percent in the region. The growth rate gap between the region and state remained at 0.5 percent in the move from total to per capita income, a result of the similar population growth rates in the two areas of 0.3 and 0.2 percent.

Buffalo County showed a markedly higher growth rate in per capita income of 1.7 percent than Adams (0.7 percent) or Hall (0.9 percent). Although Buffalo's rate slightly exceeded the state rate, Adams and Hall fell short of all the areas under comparison. Buffalo's good showing reflected the relatively strong growth rate in total income and a moderate growth rate in population. The circumstances in Adams County contrast starkly. There, a weak growth rate in total income was coupled with a population loss over the period. Even with the population decline, the growth rate in Adams' per capita income still fell short of the growth rate in Hall. Yet, Adams County historically has had a higher level of per capita income ($12,505 in 1987) than Hall or Buffalo ($11,824 and $10,781 in 1987, respectively). Even if the growth rate gaps of the 1980s are sustained, the dominance of Adams County among the trio in income level will be preserved for some time. The sluggishness of income growth, however, resulted in Adams slipping below the statewide level of per capita income in 1985.

While the dynamics of the region's population over the 1980-1987 period have been noted, recent developments on the population front deserve close scrutiny. Intercensal population estimates at the county level are subject to error, but the estimates for the region during the past several years have shown population declines in each of the three counties. All three showed successive losses in 1986 and 1987, with Buffalo showing a loss for 1985 as well. The population losses over the period were 900 for Adams, 743 for Buffalo, and 756 for Hall. The nonmetro portion of the state and the state as a whole experienced roughly the same pattern, while the metro portion showed low growth in population.

Labor Market

Labor force participation, number of employed persons, and job counts are among the standard measurements of an economy's labor market. The number of employed persons in a region is not the same as the number of jobs held. Employed persons are counted on a residence basis, while the number of jobs is counted on a place of work basis. Thus, nonresidents holding jobs in the region, residents holding multiple jobs in the region, or residents holding jobs outside the region all drive a wedge between the two bases of counting. More confusion results when observers use the term *employment* interchangeably in reference to both jobs and employed persons. In this article, the term is applied only to the latter count.

Table 2 contains information on the labor force (number of persons employed or unemployed but looking for work), employed persons, nonfarm jobs, and jobs in two leading industries: manufacturing and services. Average annual growth rates are for the 1980-1988 period.

The labor force in the Tri-Counties region has grown at a 1.1 percent rateduring the decade to date, well above the no growth record of nonmetro Nebraska but short of the 1.9 percent rate in metro Nebraska. An additional 5,200 persons appeared in the Tri-Counties labor force over the time span, while the gain in population in the region over the 1980-1987 period was just short of 2,200. Thus, labor

Table 2
County and Area Labor Market

	Adams	Buffalo	Hall	Tri-Counties	Metro NE	Nonmetro NE	State
Labor Force							
1980	15,646	18,581	23,004	57,231	342,140	420,860	763,000
1984	15,545	18,938	25,974	60,457	365,249	430,751	796,000
1988	16,093	19,833	26,507	62,433	396,192	420,808	817,000
AAGR*	0.4	0.8	1.8	1.1	1.9	0.0	0.9
Employed Persons							
1980	15,172	18,107	22,093	55,372	327,711	404,289	732,000
1984	14,966	18,185	24,684	57,835	350,554	410,446	761,000
1988	15,628	19,170	25,374	60,172	382,771	405,229	788,000
AAGR*	0.4	0.7	1.8	1.1	2.0	0.0	0.9
Nonfarm Jobs							
1980	13,247	13,620	21,747	48,614	327,995	299,588	627,583
1984	12,710	14,314	21,965	48,989	346,139	289,230	635,369
1988	13,941	15,791	23,238	52,970	391,785	296,361	688,146
AAGR*	0.7	1.9	0.9	1.1	2.3	-0.1	1.2
Manufacturing Jobs							
1980	2,156	2,996	4,286	9,438	45,661	50,747	96,408
1984	1,967	3,090	4,732	9,789	43,951	46,550	90,501
1988	2,388	3,186	4,902	10,476	45,901	48,854	94,755
AAGR*	1.7	0.9	2.0	1.5	0.2	-0.4	-0.1
Services Jobs							
1980	2,709	2,263	3,500	8,472	68,053	47,922	115,975
1984	2,986	2,809	3,966	9,761	80,500	55,390	135,890
1988	3,480	3,335	4,154	10,969	99,131	59,404	158,535
AAGR*	3.2	5.0	2.2	3.3	4.8	2.7	4.0

* - Average annual growth rate from 1980 through 1988
Source: Nebraska Department of Labor

tion rates in the region have continued to increase, following the pattern of the state and U.S. labor markets. Hall County had the highest growth rate in the region at 1.8 percent, almost matching the metro rate. Buffalo and Adams lagged Hall by considerable margins.

Growth rates in the number of nonfarm wage and salary jobs`exhibited patterns different from those of the number of employed persons. Hall County had a growth rate in jobs of just 0.9 percent, compared to its region-leading 1.8 percent growth rate in employed persons. Expansion of farm employment, decreases in multiple job-holding by residents, more travel outside the county to jobs, and relatively more employment in the form of proprietorships are possible influences that created the gap. Conversely, Buffalo County led the region in job growth with a 1.9 percent rate, adding almost 2,200 jobs over the period, while posting just a 0.7 percent growth rate in the number of employed persons. Job growth in the Tri-Counties region as a whole proceeded at a rate just slightly below that of the state, but well below that of metro Nebraska.

Manufacturing and services are examined in further detail—the former because it is a fundamental industry of the economic base and the latter because of its rapid growth during the 1980s. The region's growth rate in manufacturing jobs was a robust 1.5 percent, well ahead of the anemic rate of 0.2 percent in metro Nebraska. Declines in manufacturing jobs over the period occurred statewide and in nonmetro Nebraska. Hall County led the region with a 2.0 percent growth rate. Adams County sustained substantial losses in manufacturing jobs in the early years of the decade, but has rebounded strongly.

Nationally, services has been one of the primary growth industries in terms of jobs during the 1980s. The Tri-Counties region has been no exception, with service jobs growing at a 3.3 percent rate. This is well below the metro rate of 4.8 percent, but above the 2.7 percent rate of nonmetro Nebraska. A wide variety of growth rates appear in the region. Buffalo experienced a whopping 5.0 percent gain on an average annual basis. When this rate is viewed in tandem with Buffalo's overall nonfarm job growth rate of 1.9 percent, the tilt of the labor market toward services is apparent. New service jobs accounted for 1,072 of the increase of 2,171 nonfarm jobs in Buffalo between 1980 and 1988. An even greater dependence upon services for job growth was evident in Adams County. Total nonfarm jobs increased 694 between 1980 and 1988, but jobs in services jumped 771. Clearly, the job gains in services were required to offset losses of jobs in other industries. A different pattern emerged in Hall County, where manufacturing provided almost as much of the increase in job numbers as did services. Total nonfarm jobs rose 1,491—616 jobs in manufacturing and 654 in services. The economies of Adams and Buffalo have experienced a more pronounced tilt in the direction of service jobs than has Hall.

Table 3
County and Area Real Net Taxable Retail Sales
(Millions of Constant Dollars)

	Adams	Buffalo	Hall	Tri-Counties	Metro NE	Nonmetro NE	State
Total Sales							
1984	$171.4	$206.8	$346.3	$724.5	$4,281.7	$4,451.1	$8,732.8
1986	162.9	198.7	332.1	693.7	4,651.7	4,291.0	8,942.7
1988	174.7	230.5	364.0	769.1	4,753.8	4,654.4	9,408.3
AAGR*	0.7	3.0	1.4	1.7	2.7	1.3	2.0
Nonvehicle Sales							
1984	$151.6	$183.6	$312.2	$647.4	$3,772.9	$3,878.8	$7,651.7
1986	144.0	177.7	298.1	619.8	4,090.9	3,715.1	7,805.9
1988	153.7	204.5	328.4	686.6	4,212.7	4,000.5	8,213.3
AAGR*	0.5	2.9	1.4	1.6	2.8	0.9	1.8
Motor Vehicle Sales							
1984	$19.8	$23.2	$34.1	$77.1	$508.8	$572.3	$1,081.2
1986	18.9	21.1	34.0	74.0	560.8	575.9	1,136.7
1988	20.9	26.0	35.6	82.6	541.1	653.9	1,195.0
AAGR*	2.1	4.6	1.5	2.5	2.3	4.0	3.1

* - Average annual growth rate from 1984 through 1988
Source: Nebraska Department of Revenue

Net Taxable Retail Sales

The sales tax on food in Nebraska was suspended in October 1983, creating an artificial break in the history of net taxable retail sales figures. Analysis of growth in sales, therefore, is confined to 1984-1988. Table 3 contains the information on total, nonvehicle, and motor vehicle sales. All sales figures and average annual growth rates are in real terms.

Total sales in the Tri-Counties region have grown at a rate of 1.7 percent over the past five years, falling short of the 2.7 percent rate in metro Nebraska but exceeding the 1.3 percent rate of nonmetro Nebraska. After a decline from 1984 to 1985, region sales recovered steadily through 1988. Moderate growth marked the years of 1986 and 1987, while 1988 saw a spectacular growth rate of 9.7 percent. The region's superior performance to that of nonmetro Nebraska over the five year span was due to Buffalo County's vigorous growth rate of 3.0 percent. Hall County followed Buffalo with a 1.4 percent growth rate, but that performance still surpassed the rate in nonmetro Nebraska. Adams County did not fare well, posting just a 0.7 percent growth rate.

Growth patterns for nonvehicle sales repeated the patterns of total sales. In motor vehicle sales, a different pattern emerges in the comparison of region growth to other areas. The region's motor vehicle sales grew slightly faster than sales in the metro area. Motor vehicle sales in nonmetro Nebraska grew at an astounding rate of 4.0 percent, outpacing the metro area and the region. Rapid increases in the levels of farm income during the last few years created a surge in sales in the nonmetro area.

Buffalo County was the definite growth leader in motor vehicle sales, with a vigorous growth rate of 4.6 percent. Adams County's performance was substantially better in motor vehicle sales than in nonvehicle sales, but the county's growth rate still fell short of those in the broader geographic divisions. Hall County's growth rate of 1.5 percent in this sales category can only be regarded as sub-par in view of strong performances elsewhere.

Terms you should know

Nebraska Retail Sales Regions

For those readers who have had difficulty determining the retail sales regions in Figure III on page 11, the following definitions are presented.

Region Number	Counties in Region
1	Washington, Douglas, Sarpy
2	Lancaster
3	Dakota
4	Saunders, Cass, Otoe
6	Thurston, Cuming, Dodge, Burt
7	Johnson, Nemaha, Pawnee, Richardson
8	Butler, Seward, Saline
9	Polk, York, Fillmore
10	Boone, Nance, Platte, Colfax
11	Antelope, Pierce, Wayne, Madison, Stanton
12	Howard, Merrick, Hall, Hamilton
13	Adams, Clay, Webster, Nuckolls
14	Thayer, Jefferson, Gage
15	Buffalo, Kearney
16	Dawson, Frontier, Gosper, Furnas
17	Phelps, Harlan, Franklin
18	Hooker, Thomas, McPherson, Logan, Lincoln
19	Grant, Arthur, Keith, Perkins, Chase
20	Dundy, Hayes, Hitchcock, Red Willow
21	Kimball, Cheyenne, Deuel
22	Scotts Bluff, Banner, Morrill, Garden
23	Sioux, Dawes, Sheridan, Box Butte
24	Cherry, Keya Paha, Boyd, Brown, Rock, Holt
25	Knox, Cedar, Dixon

City retail sales in Table V on page 11 do not include motor vehicle sales. Motor vehicle sales are gathered by county and, hence, are included in region sales. The Nebraska total of the regions is the total taxable retail sales for the state. The Nebraska total for the city sales column is simply the total of the reported cities and, consequently, includes no motor vehicle sales.

John S. Austin

Nearly Three-Fifths of the Nation's 1988 High School Graduates Enrolled in College

According to the Bureau of Labor Statistics, 58.9 percent of the 2.673 million 1988 high school graduates enrolled in college by October. Nearly half of these freshmen were in the labor force. Approximately 100,000 of the high school graduates enrolled in vocational education courses.

High school drop-outs have not done so well. Of the 552,000 who dropped out between October 1987 and October 1988, only 59.2 percent were in the labor force. Furthermore, their unemployment rate was a dismal 26.7 percent.

John S. Austin

Review and Outlook

John S. Austin

National Economy

Recent evidence shows an economy stronger than expected even two or three months ago. Although there are some negatives in the latest data, the more important economic reports, such as GNP and personal income growth, show continued advances. The emerging picture is of a healthy economy with decreasing rates of inflation and low to moderate rates of real growth.

Orders in July displayed some weakness, while industrial production rose only slightly. Automobile sales responded to end of year discounting and announcements of substantially higher prices for 1990 vehicles. Housing starts were up again, and inflation rates cooled further. Consumer confidence, as measured by the Conference Board, is at a 20 year high.

There are now calls for further easing of monetary policy. Those making such calls feel that the current slow growth rates are not satisfactory. But an expansionist monetary policy at this point in the business cycle is inappropriate. Industrial capacity is tight. Expansion most likely will come in the form of price increases and not in the form of real production gains. Industrial production has leveled since the beginning of this year. Such a plateau is characteristic of an economy at the mature stage of a business cycle.

Gradual changes in monetary policy can lower interest rates and stimulate interest-sensitive sectors of the economy, such as the housing sector. Long-term interest rates have dropped, but not to the same extent as short-term rates. The savings and loan reorganization may confuse the mortgage market temporarily; even so, mortgage rates are now at a two year low.

Lower long-term mortgage rates already are affecting the housing scene. Housing starts advanced 0.8 percent in the month of July after rising 8.5 percent in June. In July, single family starts were 6.3 percent higher than in June. Single family starts had fallen 5.1 percent in May.

The second quarter real Gross National Product (GNP) growth was revised upward, from 1.7 percent to 2.7 percent—the economy was not as weak as reported originally. GNP growth rates were moderate, not robust.

Producing GNP estimates is a complicated procedure, and extensive revisions are common as new information is gathered on economic transactions. Revisions are sometimes so large that one cannot ascertain from initial reports whether the economy is expanding or contracting. Such circumstances serve as a reminder that a large basket of economic indicators must be monitored in order to track the progress of the economy accurately.

The GNP advances were supported by gains in personal income. July personal income figures advanced 0.7 percent over June. The June figure, in turn, was revised to show an increase of 0.5 percent over May. With inflation rates slowing, most of the recent gains in personal income will show advances in real purchasing power.

Once again Washington is battling over the deficit. The Congressional budget office has estimated that the 1991 fiscal year deficit will be $127 billion. The White House estimate for the same period is $88 billion. Both projections are based on the assumption that Congress will implement the current 1991 budget accord it has with the White House. The difference between the projections is due to differences in underlying economic projections. The White House estimate assumes a higher expansion rate for the economy than the Congressional budget office. Furthermore, the White House budget director estimates the deficit will be $105 billion. The fiscal 1991 Gramm Rudman deficit target is $64 billion. Gramm Rudman targets only apply to the White House budget office projections. There is no penalty if the actual deficit is larger than the forecast deficit. Nevertheless, recent deficits have decreased, perhaps reflecting moral influences of the Gramm Rudman legislation.

On the inflation front, the Producer Price Index decreased 0.4 percent in July. Eliminating food and energy prices, the decrease was only 0.2 percent. Wholesale energy prices that only a few months ago were causing increases in inflation now are helping to reduce inflation rates. Similarly, the Consumer Price Index rose only 0.2 percent. Retail energy prices were down 0.7 percent, with gasoline prices decreasing 2.2 percent. Nevertheless, retail gasoline prices are still 15 percent ahead of year ago levels.

The unemployment rate is 5.2 percent, low by standards of a few years ago. Despite the healthy unemployment rate, the July Conference Board index of help wanted advertisements fell to the March 1987 level. These data indicate that employment is not expanding at rapid rates.

The industrial production index for July advanced 0.2 percent. Domestic automobile production was 6.0 million units, at annual rates, in July. In the previous month, auto production was 6.8 million units. The impetus behind the auto makers' August discounting campaign is clear. Durable orders in July were down 1.9 percent. Most of the decrease occurred in automobile and motor orders.

Business inventories increased 0.4 percent in June. The resulting inventory-to-sales ratio advanced to 1.51 in June, up from 1.50 in May and 1.49 in April. Although these changes are slight, they are in the wrong direction. A ratio at the current level is acceptable.

The USDA issued projections for grain harvests this year. Corn production is estimated to be 49 percent ahead of 1988

Table I
National Indicators

	Annual		Quarterly (SAAR)			
	1987	1988	1988:III	1988:IV	1989:I	1989:II
Real GNP (percent change)	3.7	4.4	3.2	2.7	3.7	2.7
Real Consumption (percent change)	2.8	3.4	3.3	3.0	2.0	2.2
Housing Starts (millions)	1.6	1.5	1.5	1.6	1.5	1.4
Auto Sales (millions)	10.3	10.6	10.4	10.5	9.8	10.3
Interest Rate (90 day T-bill)	5.8	6.7	7.0	7.7	8.5	8.4
Unemployment Rate (percentage)	6.2	5.5	5.5	5.3	5.2	5.3
Industrial Production Index (1977=100)	129.8	137.2	138.4	139.9	140.7	141.4
Money Supply, M2 (percent change)	6.6	5.1	3.8	3.6	1.9	1.3

Source: Bureau of Economic Analysis
NOTE: SAAR—Seasonally Adjusted at Annual Rates

Table II
Employment in Nebraska

	Revised June 1989	Preliminary July 1989	July % Change vs. Year Ago
Place of Work			
Nonfarm	716,743	707,841	3.1
Manufacturing	98,728	99,067	4.0
Durables	48,322	47,985	2.6
Nondurables	50,406	51,082	5.3
Mining	1,864	1,885	7.5
Construction	28,143	28,605	7.3
TCU*	47,602	47,680	4.7
Trade	184,073	183,528	3.2
Wholesale	53,094	52,892	4.4
Retail	130,979	130,636	2.8
FIRE**	49,511	49,317	2.4
Services	166,689	165,278	3.7
Government	140,133	132,481	0.5
Place of Residence			
Civilian Labor Force	820,265	823,985	-0.83
Unemployment Rate	3.6%	3.4%	

*Transportation, Communication, and Utilities
**Finance, Insurance, and Real Estate

Source: Nebraska Department of Labor

Table III
Price Indices

	July 1989	% Change vs. Year Ago	YTD % Change vs. Year Ago
Consumer Price Index - U* (1982-84 = 100)			
All Items	124.4	5.0	5.0
Commodities	117.0	4.9	5.1
Services	132.5	5.1	4.9
Producer Price Index (1982 = 100)			
Finished Goods	114.0	5.1	5.5
Intermediate Materials	112.6	4.1	5.8
Crude Materials	103.7	6.9	7.9
Ag Prices Received (1977 = 100)			
Nebraska	152	0.0	10.4
Crops	133	-5.7	29.0
Livestock	164	3.8	2.8
United States	146	3.5	11.1
Crops	134	0.8	18.1
Livestock	156	6.1	6.3

U* = All urban consumers
Source: U.S. Bureau of Labor Statistics

levels, soybean production 24 percent higher, and wheat production up 13 percent. USDA projects that Soviet grain production will be down 10 million metric tons and that Soviet imports will rise 3 million metric tons.

Nebraska Outlook

Nebraska's low unemployment rate continues. The July unemployment rate dropped to 3.4 percent, down from 3.6 percent in June.

Net taxable retail sales in May increased 10.9 percent from year ago levels. On a year-to-date basis, Nebraska retail sales are 9.2 percent ahead of year ago levels. All regions show positive year-to-date gains except Falls City with a scant decrease of 0.1 percent. If Falls City's latest month's gains of 9.1 percent continue, it will show a positive year-to-date figure. Ogallala leads the state with a 14.8 percent year-to-date gain in retail sales and an impressive 29.7 percent advance in May over the previous year. Tourism in Ogallala was at high levels.

Construction in Nebraska continues to advance. Year-to-date activity levels through July, as reported by F.W. Dodge, show that housing units started advanced 11.1 percent over last year. Total square footage of new buildings increased 9.7 percent on an accumulated basis through July. The total number of individual construction projects started is 12.4 percent higher through July versus year ago levels.

Technical Note

The Bureau annually updates its estimates of the seasonal factors for Nebraska net taxable retail sales that are used to calculate the seasonally adjusted data presented in Figure II. The Census X-11 method has been applied to the data and the results incorporated into this month's report. The result is a somewhat smoother series than previously reported. For technical reasons, the March seasonal factor was increased 3.8 percentage points. Minor revisions were made to the remaining seasonal factors.

John S. Austin

Table IV
City Business Indicators
May 1989 Percent Change from Year Ago

The State and Its Trading Centers	Employment (1)	Building Activity (2)
NEBRASKA	0.8	-7.6
Alliance	0.2	142.7
Beatrice	-0.2	-31.8
Bellevue	1.2	-25.2
Blair	1.2	471.1
Broken Bow	0.0	-62.8
Chadron	0.5	340.4
Columbus	0.4	27.2
Fairbury	1.1	-90.0
Falls City	-0.6	-52.0
Fremont	0.4	23.9
Grand Island	0.5	-21.9
Hastings	0.2	-14.4
Holdrege	0.0	1,133.5
Kearney	0.4	-74.4
Lexington	1.2	334.0
Lincoln	1.3	-11.5
McCook	0.8	-91.3
Nebraska City	0.0	-64.3
Norfolk	0.7	-15.0
North Platte	0.3	8.2
Ogallala	-0.2	-24.2
Omaha	1.2	-7.3
Scottsbluff/Gering	-0.3	120.9
Seward	0.4	-35.7
Sidney	0.8	-36.0
South Sioux City	0.6	345.7
York	-0.2	-25.4

(1)As a proxy for city employment, total employment (labor force basis) for the county in which a city is located is used

(2)Building activity is the value of building permits issued as a spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Cost Index is used to adjust construction activity for price changes

Sources: Nebraska Department of Labor and reports from private and public agencies

Figure I
City Business Index
May 1989 Percent Change from Year Ago

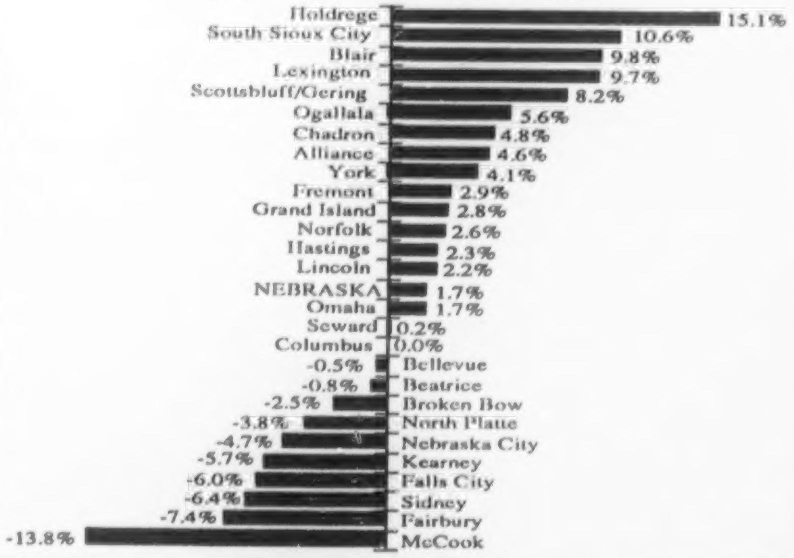
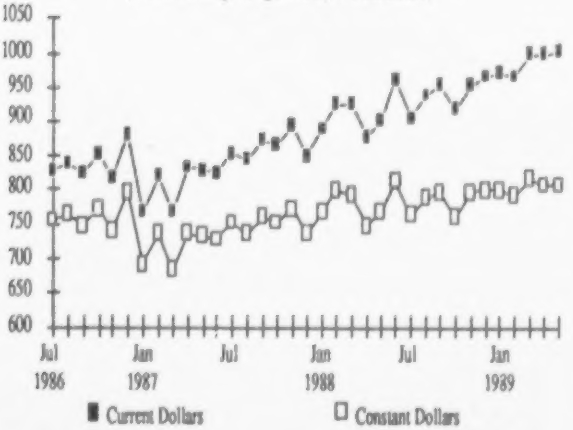


Table V
Net Taxable Retail Sales of Nebraska Regions and Cities

Region Number and City (1)	City Sales (2) May 1989 (000s)	City Sales (2) % Change vs. Year Ago	Region Sales (2) May 1989 (000s)	Region Sales (2) % Change vs. Year Ago	YTD % Change vs. Year Ago
NEBRASKA	$841,799	9.8	$992,705	10.9	9.2
1 Omaha	292,195	9.4	375,576	10.8	10.6
Bellevue	12,718	6.7	*	*	*
Blair	4,659	7.9	*	*	*
2 Lincoln	110,681	11.0	133,274	11.5	6.7
3 South Sioux City	4,504	13.2	6,633	10.6	0.3
4 Nebraska City	3,601	6.5	17,562	6.9	2.9
6 Fremont	15,939	9.9	29,515	11.0	4.4
West Point	2,578	5.3	*	*	*
7 Falls City	2,070	0.5	9,282	9.1	-0.1
8 Seward	3,925	10.9	14,499	17.7	4.0
9 York	6,570	19.2	15,192	12.7	13.1
10 Columbus	14,810	2.6	27,214	8.4	7.5
11 Norfolk	18,137	13.2	33,910	15.3	9.4
Wayne	2,870	12.1	*	*	*
12 Grand Island	33,714	14.7	48,583	14.2	10.8
13 Hastings	15,359	12.9	25,525	14.5	8.4
14 Beatrice	7,287	8.5	16,393	4.6	1.8
Fairbury	2,762	13.4	*	*	*
15 Kearney	18,060	7.4	26,308	9.2	10.9
16 Lexington	5,719	10.8	15,842	9.8	9.5
17 Holdrege	4,883	12.8	8,802	14.6	7.6
18 North Platte	15,211	-4.4	19,805	3.5	3.7
19 Ogallala	5,981	22.5	12,887	29.7	14.8
20 McCook	7,567	0.2	11,144	6.9	4.8
21 Sidney	3,698	-5.2	7,865	-0.5	6.1
Kimball	1,634	-11.1	*	*	*
22 Scottsbluff/Gering	17,513	16.5	25,420	18.2	12.6
23 Alliance	5,314	6.2	14,047	7.8	4.5
Chadron	2,562	-0.4	*	*	*
24 O'Neill	4,085	11.3	13,867	13.0	12.7
Valentine	2,413	4.3	*	*	*
25 Hartington	1,391	3.3	7,921	11.9	3.2
26 Broken Bow	3,468	11.3	11,458	6.8	6.8

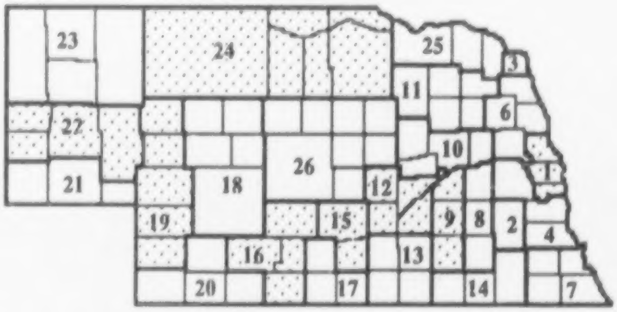
(1) See region map
(2) Sales on which sales taxes are collected by retailers located in the state. Region totals include motor vehicle sales
* Within an already designated region
Compiled from data provided by the Nebraska Department of Revenue

Figure II
Nebraska Net Taxable Retail Sales
(Seasonally Adjusted, $ Millions)



(1) The Consumer Price Index (1982-84 = 100) is used to deflate current dollars into constant dollars

Figure III
Region Sales Pattern
YTD as Percent Change from Year Ago



Shaded areas are those with sales gains above the state average. See Table V for corresponding regions and cities

Recommended Reading

Nebraska Farm Real Estate Market Developments 1988-89

Did you know that Nebraska's agricultural land values increased on average 24.9 percent in 1988? As impressive as that gain was, the February 1, 1989 state average value per acre of $432 was 42.2 percent below the 1981 peak average of $748. The greatest average value per acre of the eight reporting crop districts was $1,462 for gravity-irrigated land in the eastern district.

The greatest increase in value was 43.3 percent, reported in nontillable grazing land in the northern district. Furthermore, 45 percent of the surveyed transactions last year were cash sales. That information and more was gathered in a survey conducted by two University of Nebraska-Lincoln researchers.

For your copy of *Nebraska Farm Real Estate Market Developments 1988-89, Report No. 161* by Bruce B. Johnson and Terry Akeson, write:

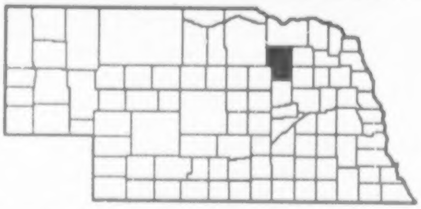
Agricultural Research Division
University of Nebraska-Lincoln
Institute of Agricultural
and Natural Resources
202 Agricultural Hall
Lincoln, NE 68588-0708

John S. Austin

County of the Month

Antelope

Neligh--County Seat



Size of county: 853 square miles, ranks 25th in the state

Population: 8,400 (estimated) in 1988, a change of -3.4 percent from 1980

Median age: 33.1 years in Antelope County, 29.7 years in Nebraska in 1980

Per capita personal income: $13,061 in 1987, ranks 69th in the state

Net taxable retail sales ($000): $33,271 in 1988, a change of +16.6 percent from 1987; $14,639 during January-May 1989, a change of +19.4 percent from the same period one year ago

Number of business and service establishments: 237 in 1986; 70.4 percent had less than five employees

Unemployment rate: 3.3 percent in Antelope County, 3.6 percent in Nebraska for 1988

Nonfarm employment (1988):

	State	Antelope County
Wage & salary workers	688,146	1,890
	(percent of total)	
Manufacturing	13.8%	6.8%
Construction and Mining	3.8	2.3
TCU	6.5	3.0
Retail Trade	18.5	21.5
Wholesale Trade	7.3	11.9
FIRE	7.0	5.6
Services	23.0	20.3
Government	20.1	28.6
Total	100.0%	100.0%

Agriculture:

Number of farms: 1,009 in 1987, 1,042 in 1982

Average farm size: 504 acres in 1987

Market value of farm products sold: $101.8 million in 1987 ($100,864 average per farm)

Sources: U.S. Bureau of the Census, U.S. Bureau of Economic Analysis, Nebraska Department of Labor, Nebraska Department of Revenue

Merlin W. Erickson

Business in Nebraska

PREPARED BY BUREAU OF BUSINESS RESEARCH
Association for University Business & Economic Research

Business in Nebraska is issued as a public service and mailed free of charge upon request to 200 CBA, University of Nebraska-Lincoln, Lincoln, NE 68588-0406. Copyright 1989 by Bureau of Business Research, University of Nebraska-Lincoln.

September 1989, Volume 45 No. 540

University of Nebraska-Lincoln-- Martin Massengale, *Chancellor*
College of Business Administration--Gary Schwendiman, *Dean*

Bureau of Business Research
P. Charles Lamphear, *Director*
Merlin W. Erickson, *Research Associate*
Margo Young, *Editorial Assistant*
John S. Austin, *Statistical Coordinator*
Jodi Benson, *Staff Secretary*
Barbara Sunsion, *Composing Technician*
Lisa Derlington, *Staff Secretary*

The University of Nebraska-Lincoln does not discriminate in its academic, admission, or employment programs and abides by all federal regulations pertaining to same.

Nonprofit Org.
U. S. Postage
PAID
Lincoln, Nebraska
Permit No. 46

CONGRESSIONAL INFO SERVIC270238
SRI BR
4520 EAST-WEST HWY
BETHESDA, MD 20814